Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

River Watch

April 1999 *Volume 1 Number 1*

Hello, welcome

to the first publication by the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council.

Getting acquainted

The Advisory Council comprises a few volunteers appointed by Governor Racicot (see inside for names, addresses and telephone numbers). We share a special interest with you and hundreds of thousands of other folks in western Montana.

We all want the Upper Clark Fork River Basin cleaned up ... its beauty and vitality restored.

What's behind this? Well, the Upper Clark Fork River has taken some hard abuse for more than a century — mostly pollution from mining waste. Last year, state, federal and tribal officials finally won agreements from the Atlantic Richfield Company to pay for restoration actions.

That's where all of us come in. The cleanup will take a long time and cost a lot of money. We who live, work, and play in communities throughout the basin need to see that it's done right.

Your suggestions on the right kinds of cleanup and restoration are needed.

To learn more about the Council, its meeting times and places, call or write:
Bill Hanson, Advisory Council Staff
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901
(406) 444-0480 or 1-800-246-8198

What we're all about

The mission of the Advisory Council is to facilitate public dialogue, promote public understanding, and advise the Governor regarding site remediation and proposals for restoration, replacement and/or acquisition of injured natural resources in the Upper Clark Fork River Basin.

Advisory Council Goals:

Education

1. Promote public understanding of the need for site remediation and restoration, replacement and/or acquisition of the equivalent of injured natural resources in the Upper Clark Fork River Basin.
2. Impart knowledge that encourages active public participation in remediation and restoration, replacement and/or acquisition decision-making.

Communication

1. Establish procedures for informing the general public, public interest groups, and governmental and tribal entities of remediation and restoration efforts.
2. Establish procedures for the public to participate in the process of identifying and reviewing proposals for the restoration and remediation of lost or injured resources.

Advisory

1. Develop a process to advise the governor of public response and concern regarding remediation and restoration.
2. Develop criteria, priorities and guidelines which define the elements/characteristics of restoration, replacement, or acquisition projects that will be recommended for use to determine eligible funding.
3. Develop and recommend procedures for applicants to submit project proposals for consideration and review, and make recommendations to the governor regarding expenditure of funds for qualifying projects.

4. Recommend stategies for the management of funds.

About the Advisory Council

Governor Marc Racicot last year saw the need for public involvement in decisions on how to clean and restore the Upper Clark Fork River Basin.

For help with decision-making, the governor created the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council. His executive order creating the council says its primary purpose "is to promote public understanding of the State's efforts to remediate and restore sites in the Upper Clark Fork River Basin that have been injured by hazardous substances for which ARCO is liable. To that end the Advisory Council shall establish a procedure for the sharing of information with the Advisory Council, State's Natural Resource Damage and Superfund Programs, and the public."

Any advice given to the governor, according to the order, must be for restoration or replacement of injured natural resources, and must be in accordance with the state's restoration plan for the basin.

The executive order calls for appointment of 15 members to the Advisory Council. Ten members must be employed outside of state government; three members must be from state agencies; one member must represent the Confederated Salish and Kootenai Tribes, and one member represent the United States Department of the Interior.

Meet the Advisory Council members

Chair: **Jim Flynn**, 619 W. Commercial St., Anaconda, 59711; Telephone: 563-5111 (work); 563-2401 (home); fulfills requirement that the Council include one businessperson.
Vice chair: **Sally Johnson**, c/o Knight & Masar, P.O. Box 8899, Missoula, 59807; Telephone: 721-5440 (work); fulfills requirement that the Council include a public member not representing any other interest.
Mary Seccombe, 132½ E. Daly St., Butte, 59701; Telephone: 723-8414 (home); fulfills requirement that the Council include a conservation district representative.
Jack Lynch, Butte-Silver Bow Chief Executive, 155 W. Granite St., Butte, 59701; Telephone: 723-8262 (work); fulfills part of requirement that the Council include two local government representatives.
Gail Jones, Powell County Commissioner, P.O. Box 28, Deer Lodge, 59722; Telephone: 846-3680 (work); fulfills part of requirement that the Council include two local government representatives.
Dr. Pat Munday, 723 W. Daly St., Walkerville, 59701; Telephone: 782-3712 (home); fulfills a requirement that the Council include an engineer.
Tom Bugni, 3460 Saint Ann St., Butte, 59701; 782-9174 (work); 723-4753 (home); fulfills a requirement that the Council include a member of the public active in conservation or recreation.
Kathleen Hadley, 1016 Eastside Rd., Deer Lodge, 59722; Telephone: 494-4572 (work); 693-2342 (home); fulfills a requirement that the Council include a natural resource scientist.
Bruce Hall, P.O. Box 82, Milltown, 59851; Telephone: 258-5268 (work); 258-6081 (home); fulfills a requirement that the Council include a local planner or local development specialist.
Geoff Smith, Clark Fork Coalition, P.O. Box 7593, Missoula, 59807; Telephone: 542-0539 (work); fulfills requirement that the Council include a representative of a non-profit organization concerned with environmental protection in the Clark Fork Basin. ***(Continued on Page 3)***

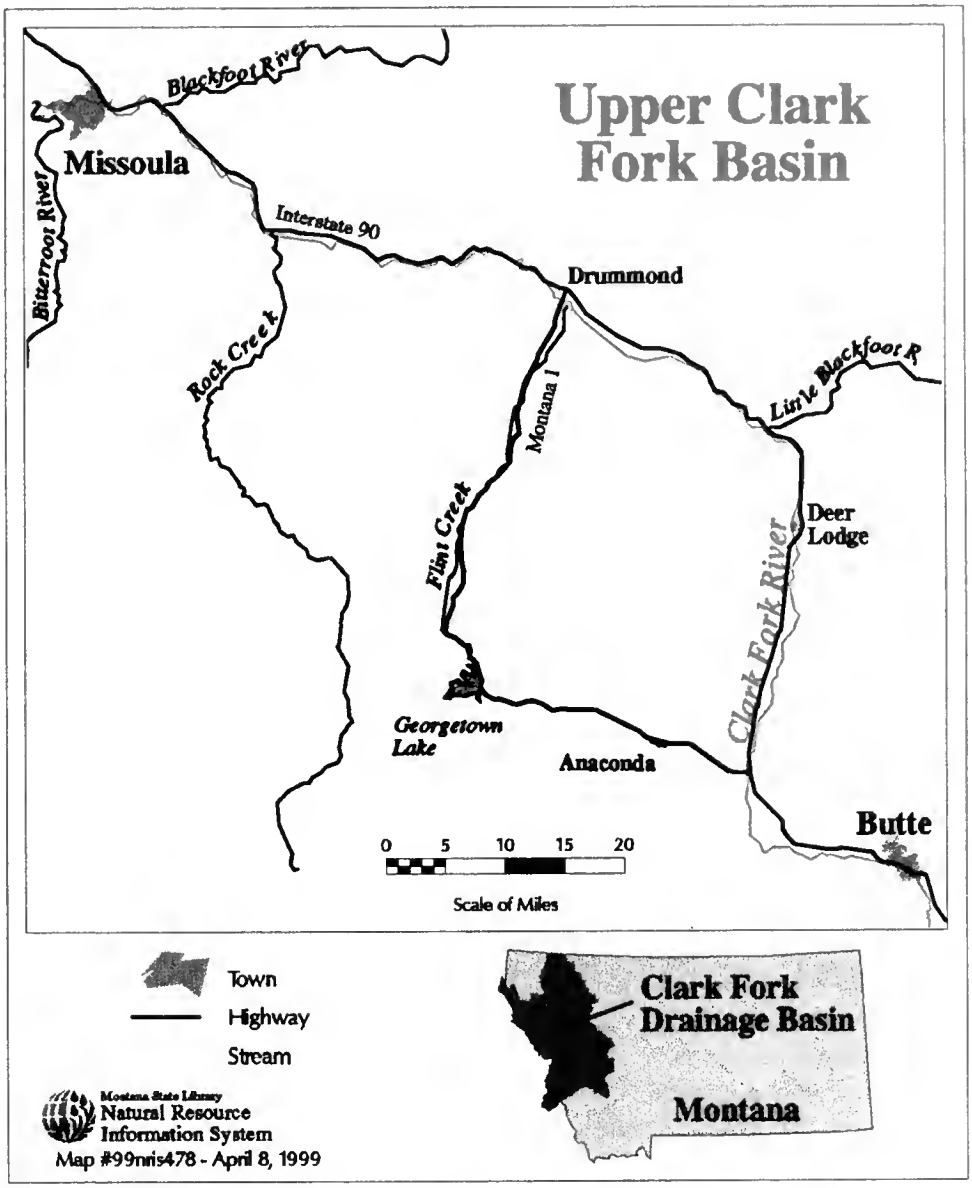
Number one river

"More water leaves Montana via the Clark Fork River than from either the Missouri or Yellowstone. It is Montana's largest and mightiest river." Those observations, published more than 15 years ago, opened a lengthy and thoughtful analysis of the river's condition and what it would take to restore it. The author, Glenn Phillips of the Montana Department of Fish, Wildlife and Parks concluded: "A well-conceived restoration and water-management program could eliminate the threat of metals in the upper Clark Fork and return to the river some of the dignity it once enjoyed. One thing cannot be disputed: A healthy Clark Fork River is a worthy goal and, if achieved, would represent a landmark accomplishment for both government and industry."

Some river history

According to the Confederated Salish and Kootenai Tribes, the Clark Fork River Basin was a hunting and fishing location for the tribes at least 400 years ago.

Meriwether Lewis and William Clark originally named the Bitterroot River "Clark's River," while early trappers in the region called what later became known as the Clark Fork River above the mouth of the Little Blackfoot the "Arrowstone River." This segment later was named the Deer Lodge River, while a segment between Missoula and the Little Blackfoot was known as the Hellgate River. The U.S. Geographical Board, in Hele[illegible]7, finally renamed the entire river Clark Fork.



Meet more Advisory Council members

(Continued from Page 2)

Mark Simonich, Director of the Montana Department of Environmental Quality, P.O. Box 200901, Helena, 59620-0901; Telephone: 444-2544.

Pat Graham, Director of the Montana Department of Fish, Wildlife and Parks, P.O. Box 200701, Helena, 59620-0701; Telephone: 444-3186

Rob Collins, Supervising Attorney, Natural Resource Damage Program, Montana Department of Justice, P.O. Box 201425, Helena, 59620-1425; Telephone: 444-0205.

Mickey Pablo, Chairman, Confederated Salish & Kootenai Tribes, Flathead Agency, P.O. Box 278, Pablo, 59855; Telephone: 675-2700.

Tony Schetzsle, United States Department of the Interior, P.O. Box 790, Deer Lodge, 59722; Telephone: 846-2070.

What's the NRDP?

Montana's Natural Resource Damage Program continues to pursue a 1983 lawsuit against the Atlantic Richfield Company (ARCO) for damages resulting from mining and mineral processing in the Upper Clark Fork River Basin.

In the past two years, the NRDP's efforts have resulted in settlement of most of Montana's claims for damages, including $15 million to cover the cost of legal action. If the federal court judge approves of the settlement, Montana soon will receive an additional $200 million dollars in compensation. Meanwhile, Montana has three additional damage claims against ARCO, worth $206 million dollars that remain unsettled.

Jim Flynn: he knows the territory

Nowadays, Jim Flynn takes care of his business, Anaconda Disposal Service, while simultaneously keeping close tabs on the many complex issues surrounding cleanup and restoration of the Clark Fork River Basin.

For many reasons, Governor Racicot saw Flynn as the most logical choice to chair the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council. For starters, he's a native of Deer Lodge, grew up in Anaconda, and is a graduate of Western Montana College in Dillon. He was elected from Beaverhead County to serve in the Montana House of Representatives in the 1970s when the Legislature enacted some of the nation's toughest environmental protection laws.

Flynn's leadership abilities, his concern for the environment and for fish and wildlife were recognized by then-Governor Ted Schwinden in 1980. Schwinden asked Flynn to serve as director of the Montana Department of Fish, Wildlife and Parks from 1980 to 1988.

It was on Flynn's watch as director that the FWP Department became the lead agency when the state filed its 1983 suit in federal court against the Atlantic Richfield Company to recover damages for injuries to the natural resources in the Upper Clark Fork River Basin.

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February 2000 *Volume 1 Number 3*

Know your Advisory Council members...

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Sally Johnson
Vice Chair
Missoula

Mary Seccombe
Butte

Tom Bugni
Butte

Kathleen Hadley
Deer Lodge

Bruce Hall
Milltown

Gail Jones
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Jack Lynch
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Pat Munday
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Geoff Smith
Missoula

Mark Simonich,
Director
MT Dept. of
Environmental Quality

Pat Graham
Director
MT Dept. of Fish,
Wildlife and Parks

Carol Fox
Restoration Program
Chief
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Find out more, or write:
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email – kcoleman@state.mt.us

State Hires Clark Fork Restoration Program Chief

The State has hired Carol Fox, a former manager of the Montana State-Superfund program, to oversee its efforts to restore the Upper Clark Fork River Basin. Ms. Fox, a former Montana Department of Environmental Quality employee, began work Jan. 18. Her new position involves overseeing the process for deciding how to use the $130 million Restoration Fund the State received from the settlement of portions of its natural resource damages lawsuit against the Atlantic Richfield Co.

"Carol's hiring is another important step forward in our effort to clean up the aftermath of years of mining in the Butte and Anaconda areas," said Attorney General Joe Mazurek, who, along with the Governor's Policy Committee, oversees the Natural Resource Damage Program that brought suit against ARCO. "With Carol on board, we can begin the process of putting to use the money we've received to date through our settlement with ARCO."

Fox, who previously worked for the Idaho Division of Environmental Quality, spent 15 years with the Montana state environmental agency. Before leaving DEQ in 1998 to move to Idaho, she had spent nine years managing the state program responsible for reclamation of state (i.e., non-federal) Superfund sites.

In her new position, Fox will take direction from the Governor's Policy Committee which is made up of the Governor's Chief of Staff, the Attorney General's Office and the directors of the departments of Environmental Quality, Natural Resources & Conservation, and Fish, Wildlife & Parks. Through the committee and with the assistance of the Upper Clark Fork River Basin Advisory Council, the Governor will determine how to spend the State restoration funds received through the 1998 settlement with ARCO.

EPA's Clark Fork River Ecological Risk Assessment Concludes Metals Pose Risk to Aquatic and Terrestrial Receptors

EPA's recently released Clark Fork River Ecological Risk Assessment concludes that metals from historic mining wastes cause adverse effects on at least some plant and animal species in both the aquatic and terrestrial environments. Within the aquatic environment, impacts on stream insects are apparent in the decreased variety of some metals-sensitive species in upstream reaches.

Exposure to metals has caused decreased trout populations throughout the river. Evidence of impacts to the terrestrial environment includes slickens areas absent of

(Continued page 2)

—REMINDER—
Applications for Restoration Projects must be submitted by April 14, 2000.

State Receives Comments on *Draft UCFRB Restoration Plan Procedures and Criteria*

On September 10, 1999 the State of Montana released for public comment its *Draft Upper Clark Fork River Restoration Plan Procedures and Criteria.* The public comment period closed on October 15, 1999 and by that date the State had received 36 comment letters from various persons and entities. Listed below are the major issues of concern addressed by public comments.

- Satisfaction with the Plan and revisions from previous drafts.
- Projects should be located within the Upper Clark Fork River Basin.
- The UCFRB Remediation and Education Advisory Council should be merged with the Trustee Council.
- Advisory Council's input on the restoration project selection process.
- Projects or types of projects that should be funded.
- Restoration Planning Procedures.
- Need for specific goals and a comprehensive plan.
- Structure of the Natural Resource Damage Program.
- Location of the Natural Resource Damage Program office.
- Participation of the Tribes and the Department of Interior.
- Funding of monitoring and research projects (both pro and con).
- Consultation with EPA and coordination with remediation.
- Revision of injury description.
- Decision making criteria.
- The role of public participation in the selection of restoration projects.
- Public access issues.
- Project implementation and oversight issues.

The State's *Responses to Public Comments* on the *Draft Upper Clark Fork River Restoration Plan Procedures and Criteria* and the final *Upper Clark Fork River Restoration Plan Procedures and Criteria* were released on February 15, 2000. These documents, as well as the *Instruction and Forms for Grant Application for Pilot Year 2000 Grant Cycle* are available at local libraries, by calling 444-0205, or at www.doj.state.mt.us.

Trout Unlimited Restoration Blueprint

Trout Unlimited presented its restoration plan for the Upper Clark Fork Basin at the June 9, 1999, meeting of the UCFRB Advisory Council. The presentation was based on a recently released Trout Unlimited document, *Restoration of the Upper Clark Fork: Guidelines for Action* (April 1999). The document includes detailed suggestions on how funds obtained by the State of Montana in its settlement with ARCO can be spent effectively on improving water quality, streamside habitat, wetlands and fisheries.

The presentation outlined needs for natural resource restoration, suggested tools that can be used, and listed some expected outcomes. Trout Unlimited recommended six objectives:

1. Restoring water quality and streamflow
2. Restoring riparian habitat
3. Improving aquatic habitat and fisheries
4. Improving stream-based recreational opportunities
5. Promoting public participation in restoration
6. Creating incentives for conserving restored areas over the long term.

Trout Unlimited emphasized that respecting private property will be critical for restoration

(Continued page 5)

EPA's Clark Fork River Ecological Risk ..

(Continued from page 1)

vegetation, as well as decreased plant variety in other contaminated areas.

It is important to recognize that the different components of the Clark Fork River ecosystem interact closely with one another, so that adverse effects on one can result in adverse effects in another. For example decreased trout populations can result in decreased abundance of otter that rely on fish in their diets. Recognition of this interrelationship between aquatic and terrestrial environments will be important in devising strategies to remediate and restore the Clark Fork River.

RESTORATION GRANT WORKSHOPS

The Natural Resource Damage Program will be hosting two Grant Workshops to assist restoration grant applicants and answer questions. The Workshops will be held at the following locations:

Tuesday March 14, 2000 Deer Lodge Community Center 9am – 12pm

Wednesday March 15, 2000 Butte Ramada Copper King Inn 9am – 12pm

To register, please call Kathy Coleman at 444-0229, email kcoleman@state.mt.us or write her at NRDP, PO Box 201425, Helena, MT 59620.

FEATURED INJURY ARTICLE:

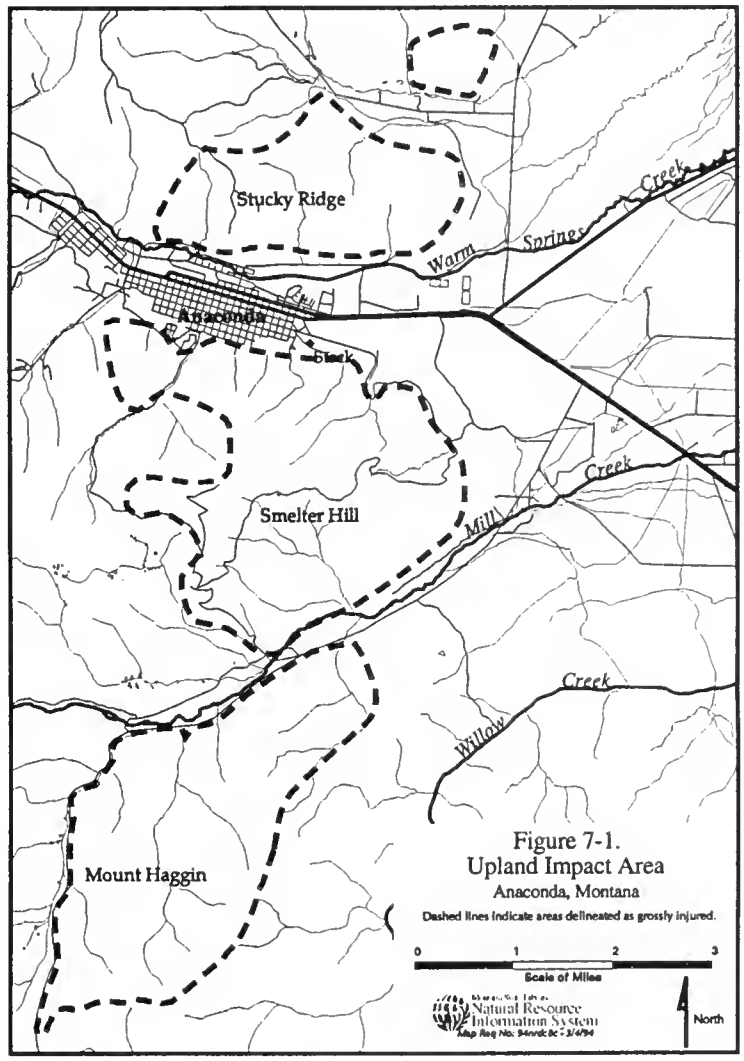
Previous newsletters have focused on the injury present at particular sites within the Clark Fork River Basin. Below is a discussion of injury in and around the Smelter Hill Area. The next issue will feature an article on the injury present within the Clark Fork River Operable Unit.

Smelter Hill Area Upland Resources

Injury A total of about 17.8 square miles, or 11,366 acres, of land was determined to be injured in the **Smelter Hill Area Uplands,** which is comprised of:

- portions of Smelter Hill (4653 acres),
- Stucky Ridge (2409 acres), and
- Mount Haggin Game Management Area (4304 acres).

The damage was caused by the release of hazardous substances from the Anaconda Smelter. Enormous volumes of arsenic, copper, lead, cadmium and zinc were continually released into the air by smelter operations and fell onto the land, resulting in extensive loss of vegetation. The lack of vegetation, in turn, resulted in significant erosion and topsoil loss.



Soils in these areas have elevated concentrations of hazardous substances including arsenic, copper, lead, cadmium and zinc. Laboratory tests have confirmed that these soils are harmful to numerous plant species. Metal concentrations are highest in the upper two inches of soil. Elevated metal concentrations on the soil surface prevent seed germination and, thus, natural regrowth. Because of this, the plant types found in these areas have changed from predominantly forest with open grassland to predominantly sparse grassland or bare ground. This change in vegetation has greatly reduced the amount of wildlife habitat. Wildlife such as birds of prey, woodpeckers, songbirds, squirrels, porcupine and marten have completely disappeared from the affected areas.

Response Action A 1998 Record of Decision established criteria and a process for determining what reclamation will take place across the Smelter Hill Area Uplands. The ROD provides for extensive reclamation efforts involving planting trees, shrubs and grasses across all of the Stucky Ridge injured area and across about half of the Smelter Hill injured area. Very little reclamation will occur in the Mount Haggin injured area.

On those areas of Stucky Ridge and Smelter Hill where remediation is to occur, assuming that remediation occurs as presently anticipated, natural resource injuries will, in a relatively short period of time, be significantly reduced. In those areas of Smelter Hill and Mount Haggin that will not be subject to remediation, significant damage will remain for centuries.

Opportunity and Anaconda Ponds – Groundwater Resources

Injury Disposal, releases and spills of solid mining wastes, milling debris, smelting by-products and process fluids occurred over the last 110 years in the Anaconda area. Mining and processing wastes containing

(Continued on page 4)

hazardous substances have damaged the area's groundwater, vegetation and riparian wildlife resources. There are five discrete areas of injury:

1. Old Works. Copper ore mined in Butte was processed at the Old Works facility along Warm Springs Creek from 1883 until shortly after 1900. During this period, approximately one million cubic yards of wastes containing high concentrations of arsenic, cadmium, copper, lead and zinc, were deposited at and around the facility. These wastes have polluted the alluvial groundwater system around Old Works and are also a source of surface water contamination in Warm Springs Creek.

2. Smelter Hill. In 1902, the Washoe Works (Anaconda Smelter) began operations on Smelter Hill. By the 1930s, thousands of tons of ore were processed on a daily basis. In the course of operations, large volumes of hazardous substances were released into the environment. Both historical and current releases of hazardous substances have contaminated groundwater in the bedrock aquifer of Smelter Hill with arsenic, cadmium, iron, manganese, zinc, fluoride and sulfate at concentrations exceeding drinking water standards.

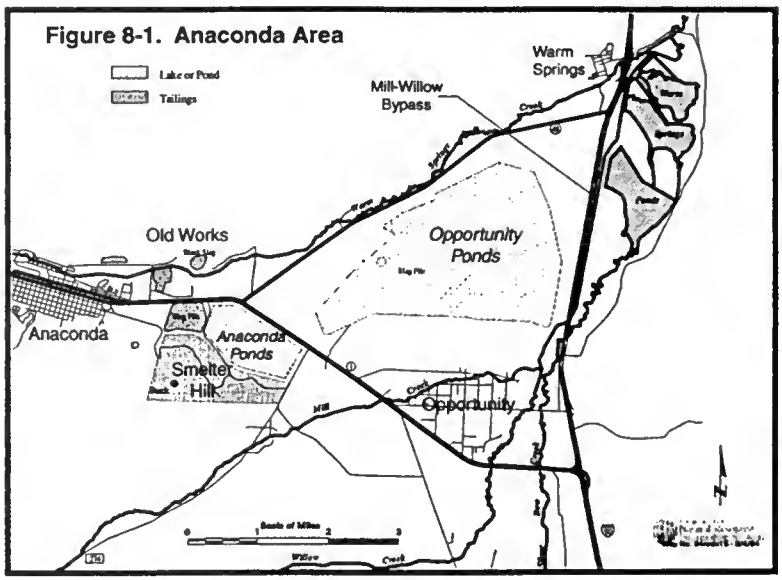
3 & 4. Anaconda and Opportunity Ponds.

Tailings from the Washoe operations were deposited in the 600-acre Anaconda Ponds and the 3,400-acre Opportunity Ponds, resulting in significant groundwater contamination. Concentrated areas of arsenic, cadmium and zinc are found beneath the Ponds only. Larger concentrations of iron, manganese and sulfate contamination are found beneath, and extend down hill from, the Ponds to the Mill-Willow By-pass and Warm Springs Creek.

The volume of waste materials in Anaconda Ponds is about 100 million cubic yards and in Opportunity Ponds about 130 million cubic yards. Hazardous substances are leached from these materials and transported into the groundwater. Leaching occurs in two ways:

1. As precipitation infiltrates through the tailings, water carries contaminants from the tailings into the groundwater.
2. Leaching of metals occurs as groundwater moves through tailings and/or the contaminated alluvial aquifer.

The large volume of tailings in contact with groundwater facilitates leaching at the Opportunity Ponds.



In addition to the groundwater damage, the surface area of tailings at Opportunity Ponds are toxic to plants and the absence of vegetation has resulted in the elimination of wildlife and wildlife habitat across the 3,400 acre area Opportunity Ponds.

5. Warm Springs Ponds. In 1918, Silver Bow Creek was dammed to create Warm Springs Ponds 1 and 2; Pond 3 was built in the 1950s. In total, the ponds cover in area of approximately four square miles. These settling ponds contain mining and smelting wastes from upstream sources. Seepage from Warm Springs Ponds has polluted groundwater below and north of the ponds. The ponds contain about 19 million cubic yards of tailings, contaminated sediments and sludges.

The total volume of injured groundwater in the Anaconda area is estimated to be 440,000 acre-feet extending over 40 square miles. Most of this injured groundwater is in the upper 50 feet of the aquifer.

Response Actions: Six Records of Decision have been issued for this area to date. The Old Works site was remedied through the removal of contaminated material and capping of the area. The tailings and other wastes in Warm Springs Ponds still remain. However, the berms of the Ponds have been reconstructed to prevent the release of wastes that could occur as a result of earthquakes or floods from the ponds to the Clark Fork River. Also, the Warm Spring Ponds Records of Decision required improvements in the treatment capabilities of the pond system through lime addition and required the removal of tailings in and along the Mill-Willow Bypass. Planned actions under the Record of Decision released in Sept. 1998 for the Anaconda Regional Wastes, Water and Soils Operable Unit, will reclaim much of the area over the next decade or so. Remedial actions are expected to revegetate the Anaconda and Opportunity Ponds by on-site reclamation or by covering the soil. Reclamation should reduce the amount of contaminant migration to the groundwater. However, wastes in the areas will remain in place and will continue to contaminate the groundwater.

Trout Unlimited Restoration Blueprint

(Continued from page 2)

success, and that maintaining traditional agricultural uses can preserve the open-space values. Among the restoration priorities the organization suggested are:

- cooperative habitat restoration projects with local landowners,
- leases of water rights for in-stream flows,
- conservation easements in critical riparian areas,
- wetland restoration ventures,
- investing in practices that reduce polluted runoff, and
- adding several new recreational access areas in the main Clark Fork corridor.

Trout Unlimited endorsed restoration approaches that favor native species such as bull trout and Westslope cutthroat trout, and projects that can be tied together to restore overall watershed function.

The group's restoration plan was developed by a group of natural resource specialists, including: Jim Kuipers, professional engineer; Paul Callahan, consulting hydrologist; and Dennis Workman, retired fisheries manager with Montana's Fish, Wildlife & Parks. Bruce Farling, who is executive director of Montana Trout Unlimited and is trained in environmental sciences, also contributed to the plan. Major funding for the report came from local chapters, the state and national Trout Unlimited organizations, the Cinnabar Foundation, the Trout and Salmon Foundation, the Center for Science in Public Participation, and the Montana Community Foundation.

Trout Unlimited is the world's largest cold water fisheries conservation organization, with 100,000 members nationwide. Montana Trout Unlimited membership numbers nearly 2,000. Copies of the plan and further information are available from Montana Trout Unlimited, POB 7186, Missoula, MT, 59807 or (406) 543-0054.

Cleanup of Silver Bow Creek Off to a Good Start

The cleanup of Silver Bow Creek is well under way. Remedial work on Reach A (from Butte downstream 1.2 miles) began in mid-September and, thanks to mild fall weather, continued until Dec. 15, 1999. The cleanup is being conducted by the Montana Department of Environmental Quality, with assistance from the federal Environmental Protection Agency, under the terms of a consent decree entered in April 1999 and approved by the U.S. District Court.

The principal Department of Environmental Quality project management folks working on Silver Bow Creek are Joel Chavez, Neil Marsh, Tim Reilly and Keith Large. The primary contractor implementing the cleanup is Jordan Construction, Inc. of Anaconda. Other contractors involved are: MAXIM Technologies of Helena; Inter-Fluve of Bozeman; Pioneer Technical Services of Butte; and the Montana Bureau of Mines and Geology.

The following activities were completed at the site during 1999:

- Construction of stream crossings for the primary access and haul roads;
- Construction and placement into operation of the primary stream diversion;
- Installation of a new county road culvert crossing at the site of the stream diversion;
- Construction, operation and removal of the temporary stream diversion used to relocate the stream under the Interstate highway;
- Removal of tailings/impacted soils from the stream channel under the Interstate highway and construction of the new stream channel in that location (about 1000 feet long);
- Excavation and hauling to the waste repository the floodplain tailings/impacted soils located between the two Interstate highway bridges;

(Continued on page 6)

—BE HEARD—

The next UCFRB Advisory Council meeting will be held on March 8, 2000 at the Deer Lodge Community Center at 1:00 p.m.

—NOTICE—

The 4th Clark Fork Basin Symposium will be held April 14-15, 2000 at the University of Montana. For additional information contact Vicki Watson @ 243-5153 or txtrky@selway.umt.edu

Cleanup of Silverbow Creek *(continued from page 5)*

- Construction of a number of sediment detention basins;
- Lime addition to the removed contaminated soils and initial construction of the waste repository;
- Construction of the new fencing at the site;
- Seeding both the reconstructed floodplain and the reconstructed streambanks in the uppermost portions of Reach A; and
- Placing sediment controls and preparing for winter shutdown at the site.

What's next. . . .

This year, the Department of Environmental Quality and the Environmental Protection Agency hope to finish stream construction and tailings removal in Reach A and, weather permitting, finish cleanup in Reach B. Reach B is also about one mile in length and is immediately downstream from Reach A. The time frame for completing cleanup of the creek is 12 years according to the 1998 Explanation of Significant Differences document. The total cost of cleanup is estimated at approximately $80 million (discounted to present value). ARCO has paid $30 million of this to the State and will pay the rest over the next two years in accordance with the 1999 consent decree. Presently most of the work is being completed just downstream of Butte; however, much of the contamination in the Silver Bow Creek area is along miles 6-11 from Silver Bow to Durant Canyon and along miles 17-22 from Fairmont Bridge to Warm Springs Ponds.

If you do not care to receive future issues of River Watch please contact Kathy Coleman at 406-444-0229 or email at kcoleman@state.mt.us.

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Commitment and Continuity by Carol Fox

April 23, 2000, marked the end of the first two-year term for UCFRB Remediation and Restoration Advisory Council members. In determining the second round of appointments, Governor Racicot first asked existing Council members whether they had the interest and ability to commit to another two years of dedicated service. And their emphatic and inspiring response was YES!

Nine of the 10 appointed Council members indicated their desire to be reappointed to the Council. In appreciation of the expertise, experience and commitment of these members and to allow for continuity, the Governor reappointed:

- Jim Flynn of Anaconda as the businessperson representative
- Mary Seccombe of Butte as the conservation district representative
- Gail Jones, Powell County Commissioner, as a local government representative
- Jack Lynch, Butte/Silver Bow Chief Executive, as a local government representative
- Dr. Pat Munday of Butte as the engineer representative
- Tom Bugni of Butte as a representative of the public active in conservation or recreation
- Kathleen Hadley of Deer Lodge as the local natural resource scientist representative
- Bruce Hall of Milltown as the local planner/local development specialist representative
- Sally Johnson of Missoula as the at-large public representative

Council member Geoff Smith did not seek re-appointment as the non-profit environmental organization representative because he will be leaving Montana in August. We appreciate Geoff's active participation on the Council and dedication to its mission and wish him the best in his new ventures. Governor Racicot has appointed Matt Clifford, Geoff's successor at the Clark Fork Coalition, to serve as the non-profit environmental organization representative to the Council. Matt is an environmental attorney with experience in many issues related to the Clark Fork River.

These 10 appointed members represent constituencies within the Upper Clark Fork River Basin. Joining them on the Council are the following representatives of state, federal and tribal government agencies (the State members are non-voting):

- Carol Lankford, representing the Confederated Salish and Kootenai Tribes
- Darlene Koontz, representing the U.S. Department of Interior
- Carol Fox, representing Montana Department of Justice, Natural Resource Damage Program
- Pat Graham, representing Montana Department of Fish, Wildlife & Parks
- Mark Simonich, representing Montana Department of Environmental Quality

In this next term, the Council will consider issues of great consequence to the remediation and restoration of the Upper Clark Fork River Basin. This Council will be the first to advise the Governor on restoration grant projects. Superfund remedy decisions for the Clark Fork River, Milltown Reservoir and Butte Area One Superfund sites are expected during this term. We are pleased to be working together with a dedicated, veteran Council whose members bring invaluable knowledge, experience and perspectives on these and other challenging decisions about how best to return the Upper Clark Fork River Basin to a healthy ecosystem.

Presentation by Deer Lodge Valley NRCS, May 1999

by Pat Munday

The Advisory Council hosted a presentation by Nancy Sweeney of the Deer Lodge Valley Conservation District and Natural Resources Conservation Service (NRCS) at its May 1999 meeting. The District has been working closely with ARCO to institute Resource Management Systems with private landowners along the Clark Fork River between Warm Springs Ponds and Garrison Junction. ARCO, as principle responsible party in the Superfund effort to clean up the Clark Fork, wants to insure that agricultural practices complement remediation.

One tool in ARCO's box of remediation strategies is called STARS, meaning Streamside Tailings And Revegetation Studies. (See STARS article on page 3.) To optimize the growth of vegetation, agricultural use of STARS treated areas must be carefully managed.

NRCS efforts are not restricted to managing STARS-treated tailings. NRCS has also worked with landowners to armor watering points to minimize bank erosion caused by cattle, fence cattle from reaching the sensitive riparian area, and replace flood irrigation with center pivot sprinklers. Despite such efforts, NRCS cautioned the audience not to expect too much. Some areas, such as calving and breeding areas, must be subjected to intensive use. In such areas, compacted soil and weed problems will continue as management challenges. Also, NRCS and ARCO can work only with willing landowners.

From the NRCS presentation and the ensuing discussion, it is unclear what Resource Management Systems efforts mean to the long-term remediation and restoration of the Clark Fork River. As one optimistic member of the audience stated, these efforts are important because they stabilize contaminated areas prior to a more effective and thorough clean up. This permanent remedy will hinge upon the Environmental Protection Agency's forthcoming Record of Decision for the Clark Fork River.

BIOGRAPHICAL SKETCH OF MARY J. SECCOMBE, MEMBER OF THE UPPER CLARK FORK RIVER BASIN REMEDIATION AND RESTORATION EDUCATION ADVISORY COUNCIL

Governor Racicot appointed Mary J. Seccombe to the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council to represent the Conservation Districts located in the Basin. Mary retired from Montana Tech six years ago after working there for 25 years. She worked in the administrative offices and, six years before her retirement, became Director of the Graduate School.

Mary has been involved in the conservation of natural resources at the local, state, regional and national levels. She has been with the Mile High Conservation District in Butte for over 35 years, both as a secretary and supervisor. She has served with the Headwaters Resource Conservation and Development (RC&D) Area for over 26 years as secretary, chairman for 13 years and as a general member of the Board of Directors. She was instrumental in forming the Western RC&D Association, which covers 13 western states, and was president of that organization for 13 years. She also was instrumental in forming the National RC&D Association in Washington, D.C., serving as president of that group for eight years.

She presently serves as president of the Montana RC&D Association and is still serving as a member of the Board of Directors of the Headwaters RC&D and as supervisor of the Mile High Conservation District.

Mary is also very active in church activities in Butte and keeps busy with family activities.

Ms. Seccombe said that she was very honored to be appointed to the Upper Clark Fork Advisory Council by Governor Racicot and felt that, with her knowledge of conservation activities and her contacts within the Basin and around the State, she was up to the task of serving on this very important council to help review proposals for the remediation and restoration of the Basin.

Plant Specialists Talk to Council

In February, Mark Majerus and Leslie Marty of the NRCS-USDA gave a presentation on reclamation research efforts in Montana to the Council. Mark Majerus manages the Plant Materials Center (PMC) in Bridger. Leslie Marty is a Deer Lodge Valley Conservation District employee stationed at the Bridger Center, working on the development of acid/heavy metal-tolerant plant materials adapted to the Upper Clark Fork River Basin and other western Montana hard-rock mining sites.

Mark Majerus gave an overview of the Center's efforts to develop plants to meet conservation needs in Montana and Wyoming. PMC is the only facility in Montana dedicated to releasing native plant materials. PMC collects, tests and produces seed and plants of grasses, forbs and trees adapted to saline soils, wildlife habitat, livestock forage, coal strip-mine reclamation, shelterbelts and native landscaping. Native plants that have developed a tolerance of the soil acidity and heavy metal contamination are prime candidates for restoration efforts.

Leslie Marty discussed the procedure for developing native plants for the restoration of sites affected by mining and smelter operations in the Clark Fork Basin. Seeds, cuttings and plants have been collected from sites affected by acid and heavy metals, primarily in the Anaconda area, and are being reproduced at the Bridger Center. Current reclamation efforts in western Montana often rely on commercial seed sources and limited wildland collections. Leslie explained that few commercially available species are adapted to soils contaminated by acid and heavy metals, as most of them were developed for the semi-arid, saline soils of the eastern Montana plains. Currently 13 grasses, six forbs and seven shrub species indigenous to the impacted Clark Fork Basin are being grown at the Bridger Center to make seed and plants available to commercial growers.

In many areas around Anaconda, materials such as lime that increase pH will not be incorporated into the soil due to steep terrain or other factors. In these areas, acidic, heavy metal-laden soils will remain, with diminished chances of restoration. Leslie believes that by using native, adapted plants, the chances of restoration success will be greatly increased. The large scale commercial production of these adapted plants will have a long term effect on the restoration efforts in the Clark Fork Basin, as well as on the commercial seed industry in Montana.

STARS in our eyes?

by Pat Munday

Approximately 4,000 acres of mine tailings lie along 120 miles of the Clark Fork River between Warm Springs Ponds and Milltown Dam. Streamside tailings are a hazard to the environment. Hazards are definite problems. There is no doubt that copper, arsenic, cadmium and other pollutants from streamside tailings severely impair the river's health. Vegetation, trout and trout-food insects are systematically poisoned by streamside tailings. The truth is plain: we must do something about this hazard. But what to do?

Have we got STARS in our eyes? STARS is an acronym for Streambank Tailings and Revegetation Studies. STARS refers to a particular treatment technology developed at Montana State University to treat tailings in place. The objective of STARS is to immobilize toxic metals and restore healthy vegetation.

In STARS remediation, lime is deep-tilled into tailings. Lime neutralizes tailings' acidity, and immobilizes metals. Then fertilizer is spread and native grass seed is sown. If all goes well, a healthy cover of grasses protects tailings from erosion. The lime permanently neutralizes acidity and binds the metals. STARS is new and innovative. But because it treats tailings in place instead of removing them, its use is also controversial.

According to critics, STARS has four major limitations. First of all, STARS has not proven effective in tailings deeper than a foot or so. This is a major reason why the State rejected STARS as the remediation technology of choice along Silver Bow Creek, where tailings are up to seven feet deep. Second, STARS is not effective in areas where groundwater is in contact with tailings. Groundwater dissolves the lime away,

STARS in our eyes

Continued from page 3

tailings re-acidify, and vegetation dies. Third, rivers are dynamic and their course is ever changing. When rivers flood or change their course and tailings wash away, the lime dissolves, acid conditions return, and metals again poison vegetation and aquatic life. Finally, STARS treated mine tailings have not proven compatible with cattle grazing. With grazing, the native grass cover tends to revert to a mono-culture of unpalatable red top grass. For all these reasons, STARS treated areas will likely require long-term monitoring and maintenance.

Proponents of STARS admit these limitations. After all, points out Barry Duff, Environmental Manager for ARCO, "STARS is just one tool in the box." For dry tailings a foot or less deep, ARCO and its consultants believe STARS is appropriate and cost-effective. Otherwise, tailings must be excavated, hauled and maintained in a repository. Long term institutional controls might well be necessary to curb the problem of "too many cattle on too little land." Stabilizing riverbanks with willow plantings and bioengineering treatments such as fiber mats can solve the problem of river meandering.

With the Environmental Protection Agency (EPA) currently working toward a 2001 deadline for a Record of Decision on the Upper Clark Fork River, the issue of STARS looms large. Whether treated in place or removed, a Clark Fork remedy will not come cheap. Other concerns, such as the Jim Smith "blowout theory," complicate the picture. [See "Will the Clark Fork River Come Unraveled?" on page 7.]

Mining and related activities released hazardous substances that extensively damaged natural resources in the Upper Clark Fork River Basin. The more permanent and effective the EPA remedy, the more the State can accomplish with restoration funds. Our children deserve no less.

CONSERVATION DISTRICT MEETING

By Mary Seccombe

A meeting was held on February 1 in Deer Lodge between supervisors of the Mile High, Deer Lodge, Granite and Missoula Conservation Districts, and Carol Fox and Greg Mullen of the Natural Resource Damage Program. Also in attendance from the Upper Clark Fork River Basin Advisory Council was Gail Jones, County Commissioner from Powell County and Mary Seccombe, Mile High Conservation District. Others in attendance were agency personnel from the Natural Resource Conservation Service (NRCS) and Weed District Supervisors.

The reason for the meeting was to gather information and to gain insight as to project criteria for submitting a project proposal from the conservation districts.

Carol covered the types of projects that conservation districts might propose for the grant funds. Also discussed were the public vs. private lands and public access issues. The consensus from the discussion was that grant projects could occur on private as well as public lands, and that applicants were not restricted to governmental entities -- individuals and private entities could also apply. Carol explained that conservation districts could submit a proposal or proposals for restoration funds but that they would have to meet the criteria that have been established and would have to follow state procurement and contracting procedures because the funds are state monies. Also, projects would have to be connected to the injured natural resources that were the subject of the Montana vs. ARCO lawsuit.

Some items that were discussed by the group were weed control and best management practices that would enhance resources and services that had been injured. Conservation Districts were hopeful to meet the eligibility requirements for restoration funds for projects that they may consider.

Carol explained that the closer the relationship between the benefits of a project and the natural resources that were injured, the better the proposal would rank according to the criteria that have been established.

The meeting was very informative and future meetings were set by the conservation district and agency personnel to coordinate an effort to gather information and to submit a proposal to the state in the future.

~ SPECIAL INSERT ~

Pilot Year 2000 Grant Proposal Abstracts

The following are the abstracts submitted to the Natural Resource Damage Program for Pilot Year 2000 Restoration Grant Funds (see story on pg. 6). These projects are verbatim as submitted by applicants.

Applicant Name: Deer Lodge Valley Conservation District

Project Title: Development of Acid/Heavy Metal-Tolerant Cultivars Project

Project Description and Benefits:

Thousands of acres at the Anaconda Smelter site in western Montana are barren or support limited plant cover consisting of predominantly exotic species. Current reclamation efforts using native species to revegetate these acidic and heavy metal contaminated minelands rely primarily on plant materials developed for coal strip-mine reclamation in dry, high pH soils of eastern Montana. A lack of species developed specifically for hardrock minelands spurred the initiation of a project to collect, test, select, grow and ultimately release indigenous native plant materials that demonstrate superior adaptation to these sites. The Development of Acid/Heavy Metal-Tolerant Cultivars (DATC) project, initiated in 1995, is sponsored by the Deer Lodge Valley Conservation District in cooperation with the Natural Resources Conservation Service-Bridger Plant Materials Center. The grass, forb and shrub species in development are suitable for a wide range of vegetation zones and provide significant wildlife habitat. The denuded land at the Smelter Hill Uplands, Mount Hagin area, and, Anaconda and Opportunity Ponds has resulted in significant erosion and topsoil loss that continues to injure watershed resources. The selection of distinct plant races or ecotypes capable of thriving in these contaminated soils will benefit the Upper Clark Fork River Basin watershed by reducing soil erosion and contaminate dispersal, improving air quality, and increasing nutrient cycling in the ecosystem. The establishment of indigenous native plants will also improve wildlife habitat by providing food and shelter for numerous wildlife species. In addition, the aesthetics and health of the neighboring communities will be positively affected. Accordingly, services such as outdoor recreation, tourism and hunting will benefit from successful revegetation of the area.

Applicant Name: Greenway Service District

Project Title: Silver Bow Creek Greenway

Project Description and Benefits:

Funding to develop and construct restoration improvements within the Silver Bow Creek Corridor over the same ten-year period established for remedial work, with restoration design submittals and expenditures made annually commensurate with progress and workplans for remedial action.

The proposal presents a broad discussion of the 26-mile project and a detailed funding request for restoration work in Reach A, B and C of Subarea One as defined in the Streamside Tailings Operable Unit (SSTOU). The proposed project is directly consistent with the stipulations of the SSTOU's Record of Decision and is based on the applicant's preliminary design plan (completed in 1997) to develop a sound strategy for restoration enhancements, protection and beneficial use of the Silver Bow Creek Corridor.

The project will restore and rehabilitate natural resources that suffered severe and widespread injury as a result of area mining and begin to replace those lost or impacted services within the corridor. Major goals are:

- Restore aquatic, riparian/wetland and uplands ecosystems
- Acquire and provide access to a passive recreational corridor
- Implement remediation and restoration activities as one project

Major tasks include:

- Design and construct in-stream habitat structures and streambank enhancements to promote the restoration of a self-sustaining fishery to the creek;
- Amend soils to accelerate growth, vigor and stability of "remedial" vegetation;
- Plant additional varieties and quantities of native plant species to enhancement ecosystem diversity;
- Introduce upper story plantings (e.g. shrubs and trees) to improve aquatic ecosystems;
- Develop controlled access to the corridor at designated "trailheads" to protect the restored landscape and manage passive recreational activities.

The proposed project is predicated on the firm belief that coordinating construction of the remedial action and restoration enhancements within the corridor would lead to lower project costs and considerable savings of settlement proceeds.

Applicant Name: Anaconda-Deer Lodge County

Project Title: Deer Lodge Valley Restoration Project

Project Description and Benefits:

We plan to aerial spray 5723 acres in the project area with 1 ½ pints Tordon and 1 pint 2-4-D, the other 600 acres we plan to spray with ½ ounce Escort, quart LV. Ester, 1 ½ pints Tordon and pint spray adjuvant. 80 acres of the project area with need to be hand sprayed with 2 quarts Curtail per acre around the homes. Most of the project area has been planted with leafy splurge beetles since 1992. Studies have shown that after the application of herbicides the plant weakens and the beetles thrive.

The project area at one time was prime rangeland and wildlife habitat for elk, mule deer and some white tail deer. Heavy metals were deposited in the soil from the emissions from the smelter's stack. The metals in the soil change the PH and make it easier for the weeds to grow. "EPA's recently released Clark Fork River Ecological Assessment concludes that metals from historic mining wastes cause adverse effects on at least some plant and animal species." Once the weeds take root they choke out the native grasses by emitting a poison. "Metal Concentrations are highest in the upper two inches of soil. Elevated metal concentrations on the soil surface prevent seed germination and, thus, natural regrowth. Because of this, the plant types found in these areas have changed from predominantly forest with open grassland to predominantly sparse grassland or bare ground. This change in vegetation has greatly reduced the amount of wildlife habitat."

By eliminating the weeds and revegitating with native grasses we will be restoring the land to what it once was. The deer and elk will return to their natural habitat. The majority of this area is part of Fish Wildlife and Parks Block Management Program. It will become a good hunting area again which will help improve the economy.

Applicant Name: Bighorn Environmental Sciences, LLC.

Project Title: Enhanced Revegetation of Silver Bow Creek (SBC), Reach A, Subarea 1, SST OU

Project Description and Benefits:

The SBC floodplain is one of the most harmed resources in the UCFRB as a result of tailings deposition during floods early in the 20th century. Damages include aquatic devastation, loss of wetland functions and values, and diminished wildlife habitat and recreational use. Some impairment is due to loss of vegetation. This proposal will restore natural vegetation in the floodplain. The applicant has been responsible for SBC remedial revegetation planning.

Under a strict interpretation of remedy, remedial revegetation falls short of baseline in three respects, which are addressed by the proposed on-site, in-kind restoration measures:

1. Amount of woody species, especially willows, across the floodplain in appropriate habitats. Approximately 10,000 willow seedlings and 300 larger aspen and cottonwood seedlings are proposed.
2. Amounts of soft-stemmed native wetland plants, mainly sedges, rushes, and bulrushes, across the floodplain in appropriate habitats. 20,000 are proposed.
3. Nutrient cycling: soil organic content and associated soil food web, which are associated with developed soils in contrast to the raw, biologically inert borrow material being used as coversoil to replace the removed tailings. 167 dry tons of organic matter is proposed for the drier, non-weedy plant habitats.

The activities proposed here use proven technologies that are likely to succeed. The agents of floodplain recovery, i.e., native wetland plants, will be planted throughout the floodplain in appropriate habitats. Further attention to the stream channel and bank are unwarranted. The channel will migrate. The floodplain will change. Beavers may modify the floodplain more than floods. Since stable endpoints play a small role, if any, in riparian system structure, attention should shift to the recovery process, which is largely vegetational. Local research has identified plant-habitat relations that form the basis for transplanting prescriptions. These native species must be transplanted, not seeded.

If approved by 12/00, transplantings will be concurrent with remedial plantings in spring-early summer 2001. In the most likely construction scenario for Reach A, optimal placement of organic soil amendment is fall/00, but a lesser surficial application in early spring/01, or after seeded plants establish, will yield tangible benefits.

The vegetational enhancements proposed here can be implemented by MDEQ with minor modifications to the existing remedial revegetation contract. Monitoring of remedial and enhanced revegetation can likewise be coordinated to optimize results and costs.

Applicant Name: Montana Tech of the University of Montana

Project Title: Upper Clark Fork River Basin Dynamic Model: A Resource for Decision Making

Project Description and Benefits:

Utilizing and managing the vast amounts of information that has been amassed through extensive monitoring and scientific study of the Upper Clark Fork River Basin for restoration effectiveness and decision making is difficult. Therefore, development of a dynamic model of the geomorphology, sediment transport, ground and surface water interactions, geochemistry, and biological resources is proposed. This model can be used to predict future trends in the UCFRB as restoration actions take place and can also be used as a scenario "developer" for proposed restoration activities. "What if" scenarios can be fed into the dynamic digital model so that results might be analyzed before any restoration work actually takes place at a particular site. The model could be used to predict today what the response of the basin would be tomorrow and in the long-term. In effect, what happens upstream will be expressed downstream, and the model can answer how.

A great deal of information on numeric modeling is already in place today, but it is limited in dimension or has only limited application to isolated segments of stream reaches. The proposed new model will use (to the extent possible) existing models and other available information as foundations to build an encompassing model. Public ownership of the model will make it available to the public and in effect will create a resource for decision making. Current and future data gathered in the basin will be input to the model with output in Geographic Information Systems (GIS) format that can be visually represented. The model will have a total system perspective but with focused and concentrated efforts. Much in the way that simulation is used by corporate America, a UCFRB dynamic numerical model will provide a necessary and timely tool for providing informed management decisions.

Applicant Name: Vicki Watson and Christine Brick, University of Montana

Project Title: Technical Assistance for Watershed Restoration Analysis and Planning

Project Description and Benefits:

The goal of this project is to lay the foundation for a cost-effective informational database for watershed restoration analysis that will meet the needs of restoration project planners in the Upper Clark Fork River Basin. This effort will build on the Montana Natural Resources Information System's (NRIS) ongoing efforts to develop TMDL-related interactive web-based mapping. The Upper Clark Fork Basin has more information than most watersheds, and has special concerns with respect to large-scale mining and smelting remediation and restoration. We propose to assist NRIS in identifying, compiling and analyzing relevant information for incorporation into a detailed and comprehensive interactive mapping system for the Upper Clark Fork Basin. In addition, we'll provide technical guidance to NRIS on the type of information and analysis that is most critical to planning of restoration projects. We'll also work with conservation districts and other groups in the basin to determine how best to make that information useful to them. Our project's purpose is to assist basin citizens in obtaining and using the best available information needed to identify and evaluate restoration needs, options and actions in the basin.

Applicant Name: Montana Fish, Wildlife and Parks

Project Title: Lost Creek Watershed Project

Project Description and Benefits:

The Lost Creek Watershed Project will "replace" injured resources through the creation and enhancement of fish, wildlife and water quality resources equivalent to those that were injured. The project will reduce excessive nutrient and sediment inputs, improve fish and wildlife habitat, remove fish passage barriers, improve water quality and restore Lost Creek's natural channel patterns. Lost Creek's condition not only contributes to the Clark Fork River's poor water quality but also reduces its potential as a spawning tributary for Clark Fork River trout. To improve the degraded channel condition of Lost Creek and reconnect it to the Clark Fork River, a major watershed restoration effort is required. The project will restore Lost Creek, while maintaining the ranching economy of the Deer Lodge Valley. Approximately 66% of the project's funding has been secured and these funding sources require project objectives to be implemented in each field season (2000-2002).

The Lost Creek Watershed Project involves the coordination of riparian and upland restoration activities to improve the Lost Creek watershed. The project incorporates six landowners covering 27 stream miles from the community of Lost Creek to the Clark Fork River. The project will address four fish passage barriers through either barrier removal or installation of fish passage. A dewatered stream reach will be reactivated through the reconstruction of a headgate, reconnecting Lost Creek to the Clark Fork River. One concentrated livestock feeding facility will be relocated and off-site water

developed. The riparian area in this reach will be fenced and livestock excluded. Several channelized reaches exist within the project area and in these reaches, the stream will be either relocated in its original position or stabilized in place. Approximately 76% of the stream's riparian corridor is poorly vegetated, and therefore riparian revegetation and management is a major component of this project.

Applicant Name: Montana Fish, Wildlife and Parks

Project Title: Manley Ranch Conservation Easement, Phase I

Project Description and Benefits:

The Manley Ranch encompasses 16,000 acres overlapping the Clark Fork-Blackfoot divide in Granite and Powell Counties, about 4 miles northeast of Drummond. It embodies what the Upper Clark Fork River Basin was before damages occurred, but is threatened by a foreclosure action in progress. The Manley family has retained the services of American Public Land Exchange Company (APLE) to find a solution that would avoid subdivision and allow the family to continue owning and working the ranch. APLE and the Manleys solicited participation by The Conservation Fund (TCF) to secure an initial loan. TCF is now seeking commitments among potential partners who would purchase a series of conservation easements, covering the entire ranch. If adequate commitment is secured before the next foreclosure payment (December 1, 2000), TCF would provide bridge financing for that payment, allowing further opportunity for conversation easements to be acquired.

This proposal is for the NRD program to fund the purchase of a Phase I conservation easement on 3,780 acres in the headwaters of Morris Creek, a tributary of the Clark Fork, at a cost of $672,840. Fish, Wildlife & Parks (FWP) would hold and manage this easement, and would expect to contribute funding with other partners for a Phase II easement in late 2001 or 2002. Morris Creek supports pure-strain westslope cutthroat trout and a 3.5–mile stretch of health riparian habitat on Phase I lands for a diversity of wildlife. By protecting the Morris Creek headwaters, water quality in the Clark Fork will be enhanced. Upland stands of Douglas-fir, juniper aspen and sagebrush add habitat diversity for elk, mule deer, black bear and other wildlife. The Phase I conservation easement would prevent subdivision and other forms of habitat loss, provide for a rest-rotation grazing program, and guarantee reasonable public access for hunting and fishing in perpetuity.

Applicant Name: Gain Consortium

Project Title: Soil Amendment Screening

Project Description and Benefits:

ABSTRACT
The Soil Amendment Screening planning project is intended to field test a selected number of soil and amendments and examine their relative efficacy for ameliorating contaminated soils, screen native plants for stabilization and remedial reffectiveness, and examine the use of novel structural approaches to soil stabilization. The study and screening activities will be used to develop a cost and effectiveness over time model for future projects. This two-part study will complete greenhouse feasibility studies and prepare a phase 1 proposal for future submission to the UCFRB Restoration Fund program. The ultimate results of this project are stronger public-private partnerships, healthier watersheds, and streams that meet "full uses."

Applicant Name: Montana Tech of the University of Montana

Project Title: Groundwater/Surface Water Interactions in a Reconstructed Stream Channel

Project Description and Benefits:

Natural streams are complex systems with living organisms connected in a functional relationship with groundwater, surface-water, riparian habitat and streamside vegetation. For reconstructive efforts along Silver Bow Creek to be successful in establishing habitat suitable for fisheries and wildlife, it is essential that the construction design include elements that will enhance a functional connection between all of these components. In particular, interactions between groundwater and surface water (i.e., the hyporheic zone) and long-term monitoring plans will be insufficient in scope to assess whether the reconstructed stream channels successfully provide the types of biogeochemical interactions which occur at a small scale in natural aquatic ecosystems.

To assist in the evaluation of whether the current remedial efforts have the potential to create a healthy stream ecosystem, a number of specific tasks will be performed. Piezometer transects will be installed at strategic localities in Segment A, the upper part of Segment B, a reconstructed channel site near Rocker, MT, and a control site on Blacktail Creek. Detailed groundwater/surface-water interactions within the stream channel and floodplain sediments will be evaluated from piezometer head data, tracer studies, synoptic stream surveys, and surface and groundwater chemistry data. This information will be used to determine the vertical and lateral extent of the hyporheic zone, and the geochemical and biological processes occurring in these zones. Numerical modeling will be used to further evaluate the chemical and physical processes occurring in the stream channel and floodplain sediments, and may be used to in a predictive sense to simulate possible modifications to the reclamation design. Monthly monitoring will allow us to evaluate transient (seasonal and long-term) changes in the physical and chemical characteristics of the hyporheic zone. Additionally, diurnal water quality changes, in-channel microinvertebrate surveys, and vegetation studies along the stream and within adjacent riparian zones will be included in our holistic approach to evaluating the reconstructed riverine ecosystem

The existing and proposed monitoring plans for the Upper Clark Fork River basin are insufficient to completely evaluate the success of the restorative efforts. We feel it is imperative that more detailed studies begin immediately. Our approach is to compare existing healthy stream systems with reconstructed reaches so that recommendations and changes can be made in a timely fashion, and in such a way as to provide a significant improvement to the long-term quality of the water, habitat, and ecology of Silver Bow Creek.

Applicant Name: Rocky Mountain Elk Foundation

Project Title: Watershed Land Acquisition

Project Description and Benefits:

The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres of land in the Upper Clark Fork River Basin from the YT Timber Company. The property is located between Anaconda, MT., and Georgetown Lake and makes up the bulk of the Warm Springs Creek drainage not already in public ownership. The property has high public values including habitat for native fish (bull trout and westslope cutthroat trout), critical big game winter range, alpine lakes and wetlands. RMEF is applying for a $6,075 million grant from the Upper Clark Fork River Basin Restoration Fund (UCFRB) to acquire approximately 9,000 acres of the property for the State of Montana. The remaining 23,500 acres is targeted for purchase by the U.S. Forest Service (U.S.F.S.) using Federal Land and Water Conservation Fund dollars. The State portion of the acquisition is located in close proximity (less than five miles) to the damaged Anaconda Uplands and Opportunity Ponds. Acquisition of the State portion of the property will replace soil, vegetation and

wildlife habitat related services lost in the Upper Clark Fork Basin including services lost in the Anaconda Uplands from smelter emissions and lost in and beneath the Opportunity Ponds from hazardous materials. Acquisition of the Watershed Property by public entities will benefit water quality in Warm Springs Creek, the major tributary of the Upper Clark Fork River and aid in the restoration of the river. Habitat for the threatened bull trout and the westslope cutthroat trout and spawning areas for brown trout will be enhanced or maintained with the Watershed land Acquisition. A critical linkage for wildlife between the Flint Range and the Pintlar Range will also be protected from development. The Watershed Land Acquisition project is a partnership between the RMEF, the State of Montana and the U.S.F.S. The first phase of the option is due December 1, 2000 and RMEF is requesting a grant to exercise at least the initial phase of the option. Funding of the initial phase of the option by the UCFRB Restoration Fund is pivotal to the remaining phases of the option agreement.

Applicant Name: Rock Creek Trust

Project Title: Z-4 Ranch Conservation Easement

Project Description and Benefits:

The 2,100 acre Z-4 Ranch conservation easement is part of the Rock Creek Trust's drainage-wide conservation effort in Rock Creek. The easement will allow a 3rd generation ranching family to continue ranching while protecting scenic open lands and wildlife habitat. The project also involves an important stream protection and rehabilitation component along the East Fork of Rock Creek. The stream was severely straightened years ago by the highway department. Riparian vegetation was removed and it now contains one of the hottest spots in the state for whirling disease. It is arguably the worst stream reach in the drainage.

The Z-4 project is one of the Trust's many individual conservation projects that will help assure that Rock Creek's nationally famous scenic beauty, wildlife habitat, and fishery remain healthy and continue to provide clean water to the beleaguered Clark Fork system. Rock Creek is the cleanest tributary and serves as a critical refuge and spawning area for five species of trout, including bull trout (threatened) and the state fish, west slope cutthroat trout (under consideration for threatened status). Long renowned for its fishery, FWP and the Governor have declared Rock Creek as one of a handful of "Core Recovery Areas" in the state for bull trout.

The Trust was created as partial mitigation for large powerlines which crossed the drainage in 1986. As the inheritor of decades of lively public support for Rock Creek, the Trust's highly successful conservation work has protected over 10,200 key acres and 13.5 miles of stream frontage. This level of protection means that Rock Creek will remain a bright spot for environmental quality in the severely damaged Clark Fork watershed, a watershed that despite restoration efforts, will need habitat and fishery mitigation for years to come. Timing for the Trust's work along this "Blue Ribbon" stream is critical as development threats loom.

Applicant Name: Montana Fish, Wildlife and Parks

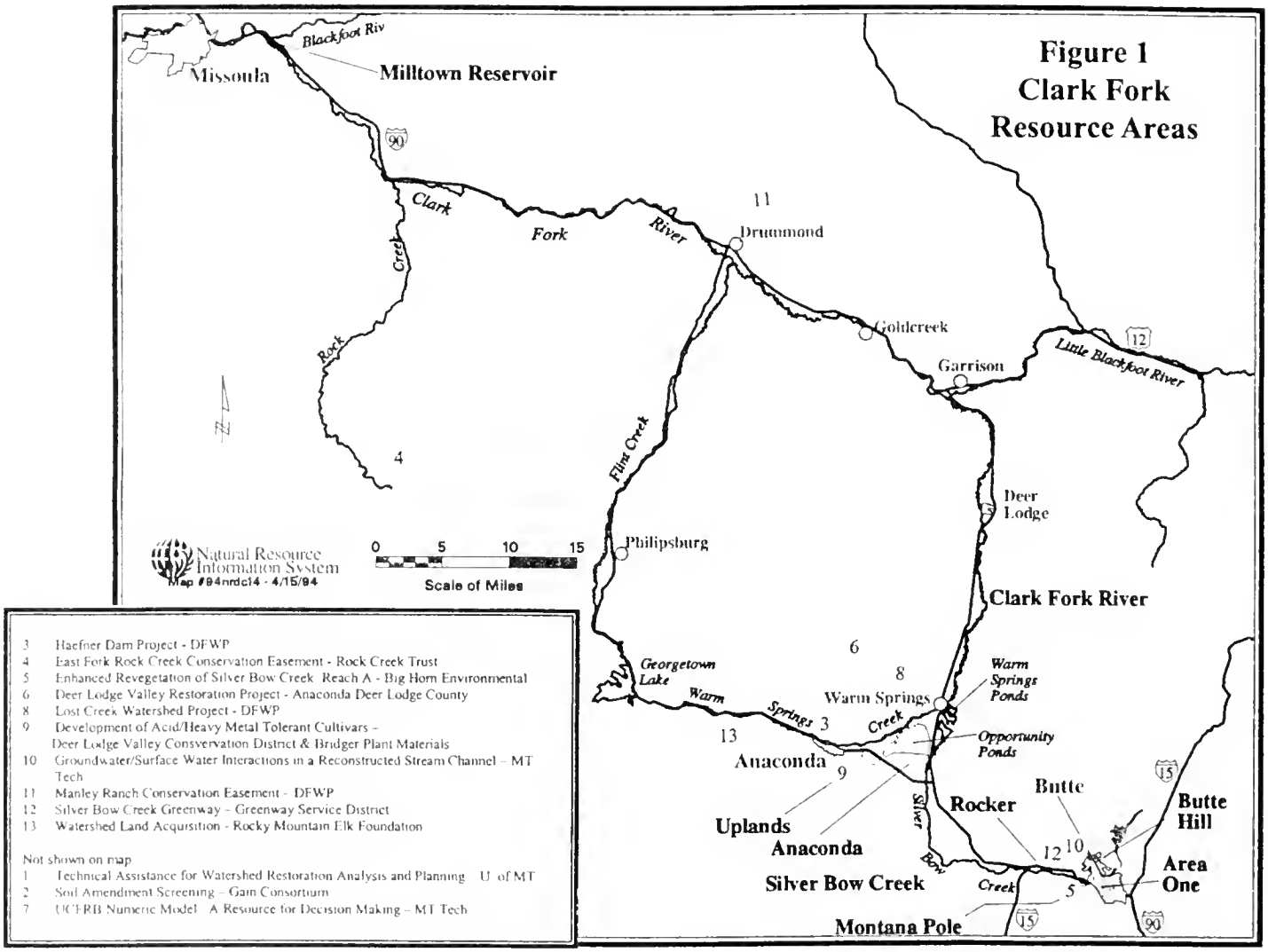
Project Title: Haefner's Dam Project

Project Description and Benefits:

This project involves the restoration of Haefner's Dam. The project will restore a 2-3 acre wetland that previously existed on this site. Haefner's Dam was originally constructed as a turn of the century off stream storage facility on Warm Springs Creek to provide city water for Anaconda. The dam was breached in two locations in the 1970's. The project will involve negotiating an easement with Deer Lodge County on 34.39 acres of county property. The County has expressed interest and support for the project. The project will involve the repair, regrading of the dam, and installation of a water control

structure. Water will be provided by an onsite spring and will not require diversion from Warm Springs Creek as the original structure. Ducks Unlimited has toured the site and offered their engineering and construction support. Historically, the impoundment supported a trout population and a variety of waterfowl and marsh species. Currently there is limited waterfowl use on a small wetland formed by the flow of the spring. The areas supports significant moose and deer use. The property contains a portion of Warm Springs Creek, city wells, and dense riparian vegetation. It lies on the western end of a stream side corridor that runs along Warm Springs Creek involving the Washo Fish Hatchery and city park lands.

Below Is A Map Indicating Proposal Locations



FEATURED INJURY ARTICLE:

UPPER CLARK FORK RIVER AQUATIC AND RIPARIAN RESOURCES

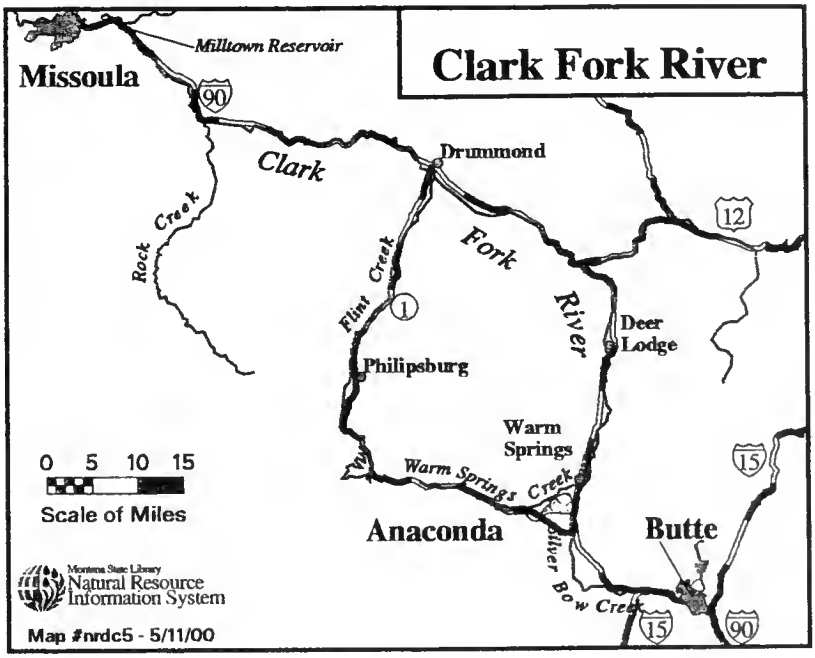
Previous newsletters have focused on the injury present at particular sites within the Clark Fork River Basin. Below is a discussion of injury in the Clark Fork River. The next issue will feature an article on the injury present at the Milltown Site.

Injury: Aquatic and riparian resources of the Upper Clark Fork River from the Warm Springs Ponds to the Milltown Reservoir have been injured by a variety of hazardous substances released from mining and mineral-processing operations in the Butte and Anaconda areas. Injuries to the Upper Clark Fork River resources caused by releases of metals include:

- Surface water contains concentrations of metals that exceed water quality standards established for the protection of aquatic life and that exceed levels shown to harm fish.
- Bed sediments contain metals at concentrations that exceed baseline conditions by, on average, more than 10 times the allowable amount, and exceed concentrations that are expected to harm aquatic insects. Aquatic insect tissues also contain elevated metals.
- Trout populations are approximately one-sixth of what they should be (17 percent of baseline) due to exposure to contaminated surface water and feeding on contaminated aquatic insects.
- Thousands of floodplain acres contain tailings and contaminated soils which continue to pollute aquatic and riparian resources. Several hundred acres of floodplain contain toxic concentrations of hazardous substances and, therefore, can sustain little or no vegetation.

Numerous waste sources contribute to injuries in the Clark Fork River: Silver Bow Creek, which discharges into Warm Springs Ponds (which, in turn, discharges into the Upper Clark Fork River via the Mill-Willow By-pass); the Ponds themselves; contaminated groundwater beneath the Opportunity Ponds; and wastes along Warm Springs Creek. The principal sources of contamination, however, are tailings and contaminated soils in the Upper Clark Fork River floodplain and in bed and bank sediments of the river. The areal extent of floodplain contamination has been estimated at over 13,000 acres. The exact extent of contamination in bed sediment and banks has not been quantified.

Tailings and contaminated soils and sediments are cycled between the floodplain and the river. Hazardous substances in the floodplain are released to surface water and bed sediments by surface runoff over exposed surfaces, scouring during high water, and riverbank scouring and erosion due to channel migration. Contaminated bed sediments and floodplain deposits are also redeposited on the floodplain by high water. At high water stage, the Clark Fork River also carries increased quantities of contaminated suspended sediments from reaches upstream to those downstream. As high water recedes, contaminated material is redeposited in the streambed, bank and floodplain areas.



State Receives 13 Grant Proposals

The State of Montana Natural Resource Damage Program received 13 Restoration Grant proposals (See Special Project Abstract insert) for Pilot Year 2000 Grant Cycle as of the April 14, 2000 deadline. The money for Restoration Grants comes from the Upper Clark Fork River Basin Restoration Fund (UCFRB Restoration Fund). This Fund was established as a result of a partial settlement of claims asserted in the lawsuit filed by the State of Montana against Atlantic Richfield Company (ARCO) seeking damages for injury to natural resources in the UCFRB.

Of the 13 proposals received, 4 involve land acquisitions and 4 strictly involve research and monitoring. None of the proposals received are project development grants. However, there is no application deadline for project development grants, which are considered on a first come, first serve basis.

In consultation with the UCFRB Remediation and Restoration Education Advisory Council and various governmental entities, NRDP will prepare draft funding recommendations for consideration by the Trustee Restoration Council. Based on public comment and input from various entities throughout the funding selection process, the Trustee Restoration Council will make recommendation to the Governor. A decision on what proposals will be funded is expected in December 2000.

State of Montana v. ARCO Upland Trial Schedule

Some of the State of Montana's outstanding restoration claims will be resolved in trial set for March 5, 2001. While a portion of the State's claims were settled previously, the "Step 2 Sites" still need to be resolved. These "Step 2 Sites" include Butte Area One Groundwater and Surface Water Resources; Smelter Hill Upland Resources; and the Clark Fork River Aquatic and Riparian Resources.

In the Consent Decree approved by the U.S. District Court in April 1999, the parties agreed that upon issuance of a Record of Decision (ROD) covering a Step 2 Site, the parties would attempt to settle their remaining claims and counterclaims with respect to that site. If settlement could not be reached within a 60 day period, the parties were to notify the court so a trial schedule on the claims and counterclaims associated with the site could be set.

The State submitted a notice to the court on August 31, 1999 advising that a ROD had been issued for the area encompassing the Smelter Hill Upland Resources Step 2 Site (Uplands) and efforts to settle the claims and counterclaims had failed. The court then held several conferences with the parties to establish a schedule for resolution of the Uplands claims and counterclaims. As a result of these conferences, the parties and court agreed that the Uplands trial would be divided into two segments. In Segment One, the court shall resolve issues regarding (1) liability, causation and injuries for the Mt. Haggin Area, Smelter Hill Area and the Stucky Ridge Area; (2) the State's claim for restoration damages for the Mt. Haggin Area; and (3) any counterclaims asserted by ARCO with respect to the Mt. Haggin Area. In Segment Two, the court will resolve the State's claims for restoration damages for the Smelter Hill Area and the Stucky Ridge Area and ARCO's counterclaims with respect to those areas.

On April 20, 2000, the court issued an order scheduling discovery, pretrial proceedings and trial for Segment One. A portion of that schedule is listed below:

- June 2, 2000 Parties shall file Revised Findings of Fact and Conclusions of Law and Supporting Briefs
- July 1, 2000 Discovery Relating to Mt. Haggin Damages Opens
- November 13, 2000 Discovery Deadline
- February 26, 2001 Pre-trial Conference
- March 5, 2001 Trial Begins

River Watch is published by the State of Montana's Natural Resource Damage Program and is paid for out of the UCFRB Restoration Fund. The editorial content is determined by the UCFRB Remediation and Restoration Education Advisory Council. Individual articles are contributed by various persons or entities representing different viewpoints, and the opinions expressed are those of the authors and do not necessarily reflect the opinions of the State of Montana, its agencies or employees.

Will the Clark Fork River Come Unraveled?

by Pat Munday

Recently, the Environmental Protection Agency sponsored a talk by Jim Smith, a geomorphologist with the United States Geological Survey in Colorado. According to Dr. Smith, the Deer Lodge reach of the Clark Fork River is a disaster waiting to happen.

Based on a mathematical model, Dr. Smith predicts the Clark Fork will unravel in the next 20- to 30-year flood. High water will flow over the riverbanks, erode the point bars and flood plain tabs (i.e. oxbows), and scour the channel. A meandering riffle-pool river will turn into a straight shallow ditch. Channel changes might send water pouring down the streets of Deer Lodge. Water temperature will rise; trout and cold water invertebrates will die. Metal-laden tailings will suppress new vegetation, and the river will not re-stablize itself in human time.

According to Dr. Smith, the fragility of the Clark Fork River is **THE** ecological risk. Forget metals. Forget arsenic. Forget streamside tailings. If there is a high water blowout, there won't be any ecology to worry about.

If true, the blowout theory requires prompt action. Though Dr. Smith was hesitant to directly address questions of remediation, he did outline some general recommendations. Halt all agricultural activity, including cattle grazing, in the floodplain. Stop bulldozing and burning willows. Plant willows, dense shrubs, thick-sodded grasses and other lush vegetation.

There are hurdles to doing this, since vegetation does not grow well on tailings. And STARS, a possible remedy for tailings, will not help. Dr. Smith finds the vegetation supported by STARS-treated tailings far too flimsy to withstand even a minor flood. Dr. Smith also questioned efforts such as Arrowstone Park near Deer Lodge, calling it a waste of money that will not withstand even a 25-year flood. According to Dr. Smith, only the intensive construction of wetlands and wet meadows might avert imminent disaster.

Are Jim Smith's predictions good science, or a false alarm? There is some room for skepticism. The model is built on a single case analysis of the Slum Creek disaster, a stream channel blowout that occurred in 1965 on this small tributary of the Platte River. Dr. Smith admits that his mathematical equations need to be confirmed through field experiments on the Clark Fork River.

Anecdotally, Dr. Smith believes riparian conditions on the Clark Fork have greatly deteriorated in recent years, but this premise has not been checked with aerial photographs or other historical data. Since only Dr. Smith has spoken out about the blowout theory, it is not clear whether other geomorphologists agree with his model and its predictions.

Clearly, Dr. Smith's model warrants attention. But, so far, there have been no field trials, and there has been little action to halt degrading/riparian conditions. Dr. Smith's theory is not exactly new. In fact, a public presentation by Dr. Smith two years ago was widely misinterpreted as support for doing nothing and letting nature take its course on the Clark Fork. At the time, little was done to counter this wrong-headed interpretation. At Dr. Smith's recent presentation, he was asked about that course of non-action. Dr. Smith was unequivocal, explaining that doing nothing and letting nature take its course is a guaranteed recipe for disaster.

Dr. Smith has delivered an interesting message. It's not popular with those who see copper as the major ecological risk, and who therefore want tailings removed from the floodplain. It's not popular with those who tout STARS as a low-cost remedy for treatment of tailings where they are. And it's certainly not popular with ranchers, who want to continue using their riparian property as they see fit. Before it completes a Record of Decision for the Clark Fork remedy, the EPA needs to figure out whether Dr. Smith's blowout theory holds water.

Your Input in *River Watch* Desired

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *River Watch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *River Watch* articles or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0205 or email kcoleman@state.mt.us

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Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

RiverWatch

September 2000 *Volume I Number 5*

Know your Advisory Council members...

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Restoration Projects. . . The Process

By Kathleen Coleman

Background

As a result of a partial settlement of its natural resource damage lawsuit against Atlantic Richfield, the State of Montana obtained approximately $130 million to restore injured natural resources in the Upper Clark Fork River Basin (UCFRB). In 1999, the State developed a draft *UCFRB Restoration Plan Procedures and Criteria* (*Procedures*) that provided a framework for expending these funds. Based on public comment and input from the UCFRB Remediation and Restoration Education Advisory Council, the State finalized the *Procedures* document in February 2000. The State elected to establish a granting process whereby various entities could apply for restoration funds based on procedures and criteria set forth in the *Procedures* document. The criteria are designed to fund the best mix of projects that will restore or replace the natural resources that were injured and/or services provided by those lost resources.

Pilot Year 2000 Grant Cycle

In February 2000, the State launched its Pilot Year 2000 Grant Cycle to test the planning process. For this first year, the State limited grant funding to $7 million and the number of projects to be funded, and also limited projects to those that could demonstrate urgency.

Between March 1 and April 15, 2000, the State received 13 applications for Pilot Year 2000, with a total funding request of $10,647,091. As set forth in the *Procedures* document, the State prepared a *Pre-draft Pilot Year 2000 Restoration Work Plan* (*Pre-Draft*) which evaluates the projects and contains Natural Resource Damage Program (NRDP) funding recommendations. The *Pre-Draft* also provides project summaries, project criteria evaluations and comparisons, overall project ranking, project maps, and application review guidelines. The State provided the *Pre-Draft* to the Advisory Council (see article on page 3 entitled "Advisory Council Recommendations"), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Interior (DOI), the Confederated Salish and Kootenai Tribes (Tribes), as well as many other interested parties, all of whom had the opportunity to comment.

Based on input from these parties and the NRDP, at its August meeting the Trustee Restoration Council gave the NRDP direction on preparing the *Draft Pilot Year 2000 Restoration Work Plan*. (See Projects on page 2)

The next meeting of Upper Clark Fork Basin Remediation and Restoration Education Advisory Council is scheduled for:

Council Chambers in the Butte Silver Bow Court House
Wednesday October 18, 2000
at 1:00 p.m. .

If you would like receive a notice and agenda of the Advisory Council meetings, please contact: Kathy Coleman at 444-0229 or kcoleman@state.mt.us

BIOGRAPHICAL SKETCH OF KATHY HADLEY, MEMBER OF THE UPPER CLARK FORK RIVER BASIN REMEDIATION AND RESTORATION EDUCATION ADVISORY COUNCIL

Kathy Hadley is a member of the Council from the Deer Lodge Valley, where she and her family live on a ranch near Galen. Kathy has a bachelor's and master's degree in biology from the State University College in Buffalo, NY. She has worked for the National Center for Appropriate Technology (NCAT), a national nonprofit organization located in Butte, for the last 14 years and is currently its Executive Director. NCAT provides research, education and technical assistance to people all across the nation on sustainable agriculture, sustainable energy and sustainable community issues. Current NCAT activities in Montana include demonstration projects installing solar photovoltaic energy systems for 12 Montana schools and in agricultural and residential settings around Montana, and assisting irrigators with water and energy conservation techniques in two Montana river drainages. Other past employment experience includes working for the Montana Department of Natural Resources (DNRC) as project manager and later as chief of the Facility Siting Bureau. At DNRC, she managed a team of scientists, engineers and economists who completed state-required environmental impact statement studies for energy projects (dams, transmission lines and power plants). She has also worked in the private sector as a consulting biologist on fisheries studies.

Kathy is an avid angler, hunter and outdoor recreationist. She worked in a volunteer capacity on state access and river issues, including serving on the Governor's first Private Lands/Public Wildlife Council. The Council developed the enhanced Block Management Program that has opened up thousands of private lands to Montana hunters each fall. She was a founding board member of the Clark Fork Coalition and in that capacity worked with other Coalition volunteers to successfully persuade EPA to include the mining-impacted Clark Fork River, between Deer Lodge and Missoula, as part of the designated Superfund Site.

(**PROJECTS**, Continued from page 1)
The Trustee Restoration Council's funding recommendations are summarized in the table below:

Trustee Restoration Council Draft Funding Recommendations

Project	Requested Restoration Funding	Recommended Restoration Funding
#1 Greenway	$1,772,758	$1,772,758
#2 Bighorn Environmental	110,800	110,800
#3 Bridger Plant Materials	141,439	141,439
#4 Lost Creek	518,382	518,382
#5 Watershed Land Acquisition	6,075,000	3,764,231
#6 Z-4 Ranch	10,000	10,000
#7 Manley Ranch	608,048	0
#8 U. of MT	9,550	9,550
TOTAL	$9,245,977	$6,327,160

What's next . . .

The *Draft Pilot Year 2000 Restoration Work Plan* will be released the first week of September for a 30-day public comment period. Individuals will be able to submit written comments to the NRDP until October 10, 2000. There will also be public meetings held at the **Butte Comfort Inn on Tuesday, September 26, 2000 at 7:00 p.m** and the **Missoula Court House, Annex Room 201, on Tuesday, October 3, 2000 at 7:00 p.m.** NRDP staff will provide an overview of the process and a short summary of each of the grant projects. There will also be an opportunity at this meeting for individuals to provide formal comments to the State.

Based on public comment and input from various entities, the Trustee Restoration Council will make recommendations to the Governor. A final funding decision by the Governor is expected in December 2000.

ADVISORY COUNCIL RECOMMENDATIONS

The following letter was presented to the Trustee Restoration Council prior to their meeting held on August 23, 2000. The Advisory Council met on August 9th to vote on their recommendations. Jim Flynn, Advisory Council Chairman also holds a seat on the Trustee Restoration Council.

TO: Trustee Restoration Council Members
FROM: Jim Flynn, Advisory Council Chairman
DATE: August 15, 2000

The UCFRB Remediation and Restoration Education Advisory Council met on August 9th to review the applications for expenditure of Natural Resource Damage funds for the year 2000. The Council approved the following projects:

1. Greenway Project
2. BigHorn Environmental Project
3. Bridger Plant Material Project
4. Lost Creek Project
5. Watershed Land Acquisition Project
6. Z-4 Ranch Conservation Easement Project
7. Manley Ranch Project
8. University of Montana Project

Approval of these projects stayed within the $7 million cap established at the outset of the process for this year. However, the recommendation regarding the Watershed Land Acquisition Project does commit $2.3 million from next year's allocation.

I am attaching a summary of the action taken by the Council on each project. I look forward to the discussion at our meeting on the 23rd.

PROJECTS APPROVED BY THE ADVISORY COUNCIL

1. Greenway Project – Motion to approve passed 10-1. The Project had strong support, however, concern was expressed that too much money was allocated for infrastructure such as flush toilets and landscaping.
2. BigHorn Environmental Project – Motion to approved passed 11-0. No discussion.
3. Bridger Plant Material Project – Motion to approve passed 11-0. No discussion.
4. Lost Creek Project – Motion to approve passed 11-0. No discussion.
5. Watershed Land Acquisition Project – An amendment to the motion to approve was to fund $2.3 million out of next year's funds. The amendment passed 8-3. Discussion on this amendment centered around committing next year's funds.

   An amendment to the motion to approve was to fund $3.7 million of the total cost this year. The amendment passed 10-1. Discussion again centered on committing next year's funds. The motion to approve the Project as amended passed unanimously.
6. Z-4 Ranch Conservation Easement Project – Motion to approve passed 10-1. Concern expressed that access was not good. In future should be better addressed.
7. Manley Ranch Project – Motion to approve passed 7-4. No discussion.
8. University of Montana Project – Motion to approve passed 8-3. No discussion.

Public Meeting Notice

The Department of Justice/ Natural Resource Damage Program will hold two Public Meetings to discuss its *Draft Pilot Year 2000 Restoration Work Plan.* This document outlines the applications and the State's recommendations for Pilot Year 2000 restoration grant funds obtained from the settlement of Montana v. ARCO. These meetings will provide an overview of the process and a short summary of each of the projects. There will also be an opportunity for individuals to provide formal comments to the State. These meetings will be held at the following locations:

Butte Comfort Inn
Tuesday September 26, 2000
At 7:00 p.m.

Missoula Court House, Annex Rm 201
Tuesday, October 3, 2000
At 7:00 p.m.

For additional information, please contact Kathy Coleman at 444-0229

FEATURED ARTICLE:

Previous newsletters have focused on the injury present at particular sites within the Clark Fork River Basin. This issue will discuss the Ecological Risk Assessment Addendum for the Milltown Reservoir site. Milltown Reservoir is located at the confluence of the Clark Fork and Blackfoot River approximately 125 miles downstream from Warm Spring Ponds. (See "Milltown Groundwater Resources" page 9)

Milltown Reservoir Sediments Site Ecological Risk Assessment Addendum and Focused Feasibility Study

By: Russ Forba, EPA

On April 15, 2000, EPA released the Ecological Risk Assessment Addendum (ERA Addendum) for the Milltown Reservoir Sediments Site . This document outlines EPA's views of the risks posed to downstream aquatic life by releases of contaminated sediments. It should be noted that this document does not address risks posed to aquatic life in the reservoir or the risks to human health from contaminated groundwater or release of contaminated sediments. These other risks were assessed in earlier risk assessments and the general findings are listed below:

1. There is a significant threat to individuals drinking groundwater contaminated by arsenic in Bonner. An alternate water supply now supplies water to those families where EPA and the State believed an unacceptable level of arsenic existed in individual wells.
2. The reservoir sediments impact aquatic life in the reservoir, but generally the wetlands are healthy and risks are acceptable.
3. The metals and arsenic do not pose an unacceptable risk to human health downstream when sediments are released from the reservoir.

The February 1996 ice scouring event and subsequent release of high levels of total recoverable metals caused EPA to take a closer look at the impact of such releases on downstream aquatic life in the ERA Addendum.

EPA found that these kind of ice scouring events, which are believed to occur on the average every 5 to 10 years, pose an unacceptable risk to fish and macroinvertebrates downstream. This risk is due to the high levels of metals in the sediment, primarily copper, which is mechanically stirred up by ice moving through the reservoir. Similar risks are posed to downstream aquatic life when high concentrations of metals in sediments are released from rapid drawdowns of the reservoir. Monitoring data collected during the ice-scouring event indicated that the level of copper downstream of the dam was 20 to 40 times the acceptable state water quality standard. The population of trout below the dam also dramatically declined after the ice scouring. Numbers of trout greater than 8 inches in length were 62 percent lower in 1996 than in 1995, and the numbers of trout less than 8 inches in length were 70 to 85 percent lower in 1996 than 1995. A caged fish study conducted in 1971 during a rapid drawdown showed 100 percent mortality to trout.

EPA believes that normal high flow snowmelt events (as in the spring of 1997) pose very low risks to aquatic life from exposure to dissolved copper below the dam. State standards for total recoverable metals are exceeded frequently during these normal high flow events but these levels of metals are an order of magnitude below those encountered during the ice scouring of 1996 or the 1971 reservoir drawdown. Site-specific evidence – such as macroinvertebrate population indices, levels of metals fine-grained bed sediment, absence of observable effects of metals in caged fish studies, and general trends in trout populations – suggest that risks are low during these normal high flows.

(Continued on page 5)

YOUR INPUT IN *RIVER WATCH* IS DESIRED

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *River Watch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *River Watch* article or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0229 or email kcoleman@state.mt.us

Featured Article
(Continued from page 4)

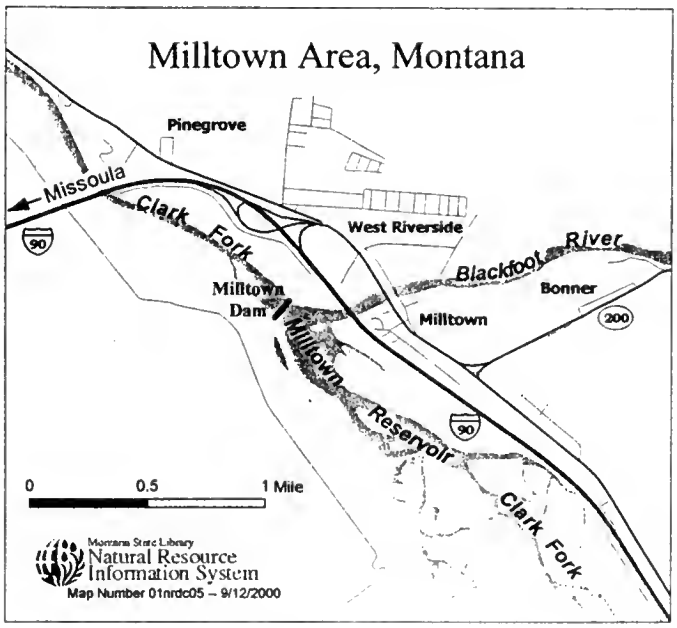
In 1996, EPA released a draft feasibility study (FS) that evaluated alternatives for mitigating the contaminated groundwater problem at Milltown. The 1996 ice scouring pointed out to EPA that there are unacceptable risks posed by the release of contaminated sediments during such events and during rapid drawdowns. EPA initiated the development of a focused feasibility study (FFS) to evaluate alternatives to mitigate the impact of such releases. The alternatives being evaluated in the FFS are briefly outlined below:

1. No Action with existing institutional controls (includes fish passage and dam safety upgrade costs for comparative analysis)
2. Operational Practices/Modification of Dam (includes fish passage and dam safety upgrade costs for comparative analysis)
3. Operational Practices/Modification of Dam with Erosion/Scour Protection or Channelization (includes fish passage and dam safety upgrade costs for comparative analysis)
4. Operational Practices/Modification of Dam with Periodic Sediment Removal (includes fish passage and dam safety upgrade costs for comparative analysis)
5. Dam Removal/Partial Sediment Removal, Channelization, Leachate Collection/Treatment
6. Total Sediment Removal (3.0 and 6.6 million cubic yards) and Operational Practices/Modification of Dam
7. Dam Removal/Total Sediment Removal (3.0 and 6.6 million cubic yards)

Appendices

1. Sediment Removal Option
   - A. Mechanical Dredging Method
     1. Bypass channel installation followed by sediment removal then dam removal
     2. Channel protection followed by dam removal then sediment removal
   - B. Combination mechanical dredging/hydraulic dredging (bring water level down to below crest level using radial gate; remove as much sediment as possible with heavy equipment; remove the remainder with cutterhead suction dredging)
   - C. Hydraulic dredging with cutterhead suction dredging (with limited mechanical sediment removal at normal pool level)
2. Sediment Transportation Option
   - A. Truck
   - B. Rail
   - C. Slurry line
3. Sediment Disposal Option
   - A. BFI
   - B. On-site in upstream end of site
   - C. Bandman Flats
   - D. Opportunity Ponds
   - E. Other locations in Missoula County

EPA plans to complete the FFS this fall and move through the final FS, Plan and Record of Decision (ROD) in 2001. For additional information concerning the feasibility studies, risk assessments, or the remedial decision making process for the Milltown project, please contact Russ Forba at EPA (441-1150, ext. 249) or Keith Large at the Montana Department of Environmental Quality (406-444-5875).



CLEAN WATER: NO DAM

By: Matt Clifford

At the Clark Fork Coalition, we believe the case for removing the toxic sediments at Milltown – and the dam that keeps most of them there – is far stronger than the case for leaving them in place. We believe the people of the Clark Fork Basin now have an unprecedented opportunity that they should seize.

The roughly 8 million cubic yards of mining waste piled up behind the dam are more than enough reason to take action. These sediments contain metals that are poisonous to both people and aquatic life and are the reason the reservoir is a Superfund site. They leach arsenic, a powerful cancer-causing agent, into the surrounding groundwater, rendering the water in some Milltown wells unsafe to drink. To make matters worse, arsenic has turned out to be even more carcinogenic than originally thought, so even more wells are likely to be declared unsafe in the near future.

The sediments also contain huge amounts of another pollutant, copper, which is deadly to fish. Almost every spring at high water and during winter ice scours like the one in 1996, sediments are scoured from the bottom of the reservoir and wash over the dam. The same thing often happens when the reservoir is lowered – as it was in 1996 for safety reasons. In either case, the result is often a deadly pulse of copper that far exceeds the state water quality standards that are in place to protect fish.

Make no mistake: The dam remains in Milltown not because it is economically viable, but because it abuts a Superfund site. It generates less than two megawatts – a tiny fraction of the power that a single customer, Smurfit-Stone Container, uses. Montana Power has literally tried to give the dam away and would probably have moved to decommission it by now if not for fear of Superfund liability. ARCO, the company that already *is* liable for Superfund cleanup, suggests using the dam to keep most – though certainly not all – of its sediments from washing downstream. It favors cleanup options that call for "managing" the sediments in place, which could reduce downstream copper pollution to some degree. But those options assume that someone with the necessary expertise and financial resources will be around – forever – to conduct the finely-tuned dam operations that are necessary to prevent disaster. With millions of cubic yards of poisons hanging over our heads, is it wise to stake the future of our river on the chance that some corporate entity will be around to "manage" the sediments, forever? And even if we were willing to take such a gamble, none of those options would do anything about the arsenic plume that is contaminating Milltown's groundwater.

Leaving the pollution in place is the path of least resistance. It is the weak – and, for ARCO, cheap – solution. But it is also the one that fails to consider the costs borne by current and future generations.

If all the pollution problems weren't enough, another compelling reason exists for removing the dam: It blocks fish, keeping trout populations in the Clark Fork and Blackfoot Rivers well below what they ought to be. Before the dam was built, cutthroat and bull trout grew large and fat in the main Clark Fork below Missoula, and then moved upstream to spawn in smaller streams like Rock Creek and various tributaries of the Blackfoot. Every spring, thousands of trout still congregate below the dam, trying unsuccessfully to migrate past it. The dam also creates ideal habitat for northern pike, an exotic species that eats young trout. Several years ago, Governor Racicot's Bull Trout Scientific Group found Milltown Dam was the main reason that the bull trout is almost extinct in the middle Clark Fork River.

What about the local economy? Certainly, keeping 8 million cubic yards of toxic-laden sediments next to a town isn't very good economic development. And while the artificial warm water fishery in the reservoir may provide some small benefits, imagine the economic boom that would come if the native trout fishery were to return to its historic levels.

Moreover, no one should underestimate the economic benefits of having a free-flowing, clean river running through a town. Just ask the people of Butte, who are working hard to develop a greenway along the restored Silver Bow Creek. They are doing so because they understand the economic and social benefits that a clean, free-flowing river can provide. Or ask the people of Missoula, who know that the Clark Fork is one of their town's biggest economic assets.

At some point we must ask ourselves whether the marginal benefits provided by the dam can possibly justify giving up what may be our best chance to truly restore the Clark Fork. For the Coalition, the best future for the river is clear: one with clean water, and no dam.

MILLTOWN DAM AND RESERVOIR: A COMMUNITY ASSET

By: Bruce Hall

The U.S. Environmental Protection Agency (EPA) has tentatively scheduled a remedial decision for Milltown Reservoir Sediments Operable Unit in 2001. That decision may have dire consequences for the local community should a dam removal option be part of EPA's decision. In response to agency criteria that considers public support for a remedy selection, the Bonner Development Group, a local grass roots community organization, has formalized a position on the Milltown site.

The Bonner Development Group (BDG) was incorporated in May 1995 as a proactive community organization. Community residents work cooperatively to promote the kinds of growth that will achieve a balance between the native beauty of the community environment and commercial, residential, and industrial development, in order to facilitate prosperity, employment and infrastructure support.

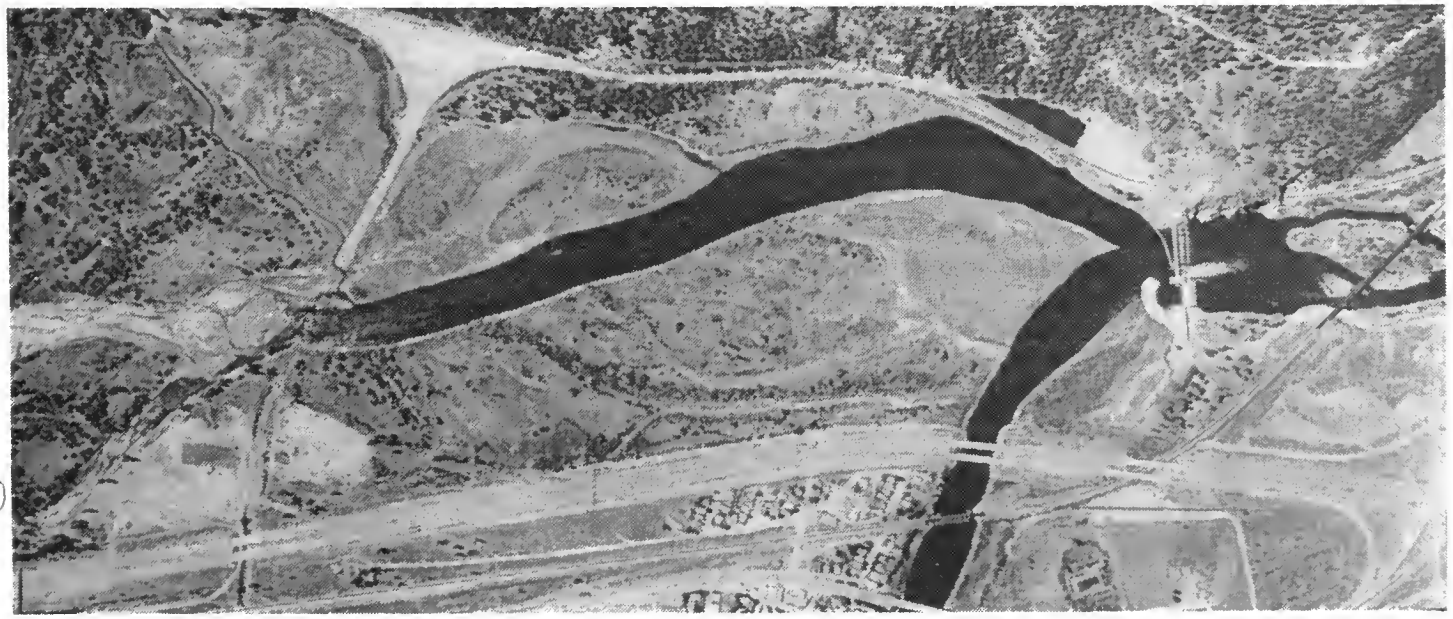
The BDG supports a dam in place/sediments in place alternative for Milltown. The BDG board of directors favor innovative and appropriate technologies that will best restore the resource and serve the community while preserving the integrity of the wetland environment as created by the Milltown Dam. The weight and complexity of the challenges that surround Milltown Dam and Reservoir reveal no easy fix or simple solutions.

A dam removal scenario is a losing proposition for the local economy. Representing approximately 15 percent of the Bonner-Milltown tax base, the Montana Power Co. contributes roughly $200,000 annually in tax revenue to the local school district. The most significant portion is derived from the taxable value of the Milltown Dam.

The Milltown Dam is a unique asset that creates the century-old landmark reservoir. The associated wetland environment provides the community with a positive amenity through recreational, educational developments, and wildlife viewing opportunities.

The Milltown Dam, which currently generates electricity, represents a turn-of-the-century hydroelectric facility worthy of preserving as a national treasure. Retention of the dam offers development opportunities for the Bonner-Milltown community that will reinforce its central historical role at the confluence of the two rivers.

The Montana Power Co. and ARCO have agreed to ensure adequate capitalization and continued funding for future operations at Milltown. This announcement provides a strong reason for EPA to critically evaluate remedial alternatives that ensure retention of the dam. The Bonner Development Group supports ARCO and Montana Power Co.'s long-term solution for Milltown Dam – one that will meet agency requirements, will fund remediation, and provides third-party local control of the dam into the future.



RESTORATION FUND STATUS

By: Carol Fox

Background

On April 19, 1999, the U.S. District Court for the District of Montana approved a consent decree between the Atlantic Richfield Company (ARCO) and the State of Montana, partially settling the Montana v. ARCO natural resource damage lawsuit. In addition to the payment of $15 million for assessment and litigation costs, $80 million for Silver Bow Creek remediation costs, and transfer to the State of land worth $2 million, ARCO agreed to pay the State $118 million on or before July 18, 1999, plus interest from April 6, 1998. With interest, ARCO's payment to the State totaled approximately $129.3 million in natural resource damages. Under the terms of the Consent Decree, $10 million of that was set aside in the Silver Bow Creek Reserve Fund to be used, if necessary, to complete the remediation of Silver Bow Creek. The remaining $119.3 million, plus $460,000 in leftover cost recovery settlement funds, were deposited in the Restoration Fund to restore or replace the natural resources injured and/or the services lost as a result of hazardous substance releases that were the subject of the Montana v. ARCO lawsuit.

The Montana Board of Investments administers both funds, which are split among a variety of investment funds:

- Short-term investments to provide liquidity are made through the Short Term Investment Pool (STIP).
- Long–term investments are made in the Trust Fund Bond Pool (TFBP).
- Other investments are made in various corporate securities that mature typically in a 2- to 10-year time frame.

The majority of the settlement funds are invested in the TFBP, which typically yields about 7% in interest earnings.

UCFRB Restoration Fund Status

Between July 1999 and July 2000, interest revenues from the Restoration Fund have totaled approximately $8.1 million. Monthly interest revenues in the past six months ranged between $700,000 and $750,000. The Trustee's current policy regarding available grant funds is that only interest earned on the principle in the coming years will be expended, unless the Trustee finds that it is appropriate to invade the principle to fund significant or time-critical projects. If current market trends continue, annual interest revenue in the next fiscal year would be between $8 and $9 million.

Table 1 provides a financial revenue summary for the Restoration Fund investments. Investments are divided between the TFBP - 76%, the STIP – 6%, and Corporate Securities – 18%. The five Corporate Securities mature between 2002 and 2005. The book value as of June 30, 2000 was approximately $126.4 million; the market value was approximately $122.9 million. The book value represents the total amount of Restoration Funds invested in securities. It includes amortization adjustments to compensate for purchasing investments above or below par, which is the value of the security at maturity. The market value is the value of those investments if they were to be cashed out today.

Table 1. ASSET BREAKDOWN (as of 6/30/00)[1]

Security Name	Maturity	Book Value	Market Value
Americredit Auto TR [2]	9/5/03	$2,000,000	$2,000,938
Chase Manhattan	2/15/02	$5,170,569	$5,083,900
Ford Motor Credit	1/15/03	$5,134,750	$4,993,700
WFS Financial Auto Trust[3]	10/20/03	$7,499,690	$7,407,420
Wells Fargo & Co.	7/15/04	$2,998,658	$2,918,310
Trust Fund Bond Pool		$95,499,417	$92,443,003
Short Term Investment Pool		$8,074,261	$8,074,261
Total		$126,377,345	$122,921,532

(1) This does not include interest revenue generated in June 2000
(2) Average life 0.8 years
(3) Average life 1.1 years

Table 2 summarizes Restoration Fund expenses, which total $403,461 from January 1998 through June 2000. The Montana Department of Fish, Wildlife and Parks (MFWP) has expended $49,653 of the $3.2 million allocated by the Consent Decree for wetland/riparian enhancement in the UCRFB on Warm Springs Creek rehabilitation activities. Advisory Council expenses total $38,349, which includes $34,460 for reimbursement of DEQ for its expenses in providing administrative support to the Council. NRDP restoration expenses total $315,429 for restoration program development and

(Continued on page 9)

Restoration Fund Status

(Continued from page 8)

implementation and consent decree implementation activities.

Table 2. UCFRB RESTORATION FUND EXPENSES

Entity	Expenses
MFWP wetland/riparian through 6/30/00	$49,653.00
MFWP bull trout restoration through 6/30/00	$0.00
Advisory Council through 6/30/00	$38,349.14
NRDP Restoration from 1/98 through 6/30/99	$108,007.31
NRDP Restoration from 7/1/99 to 7/1/00	$207,451.96
Total	$403,461.41

As of July 2000, the Restoration Fund balance was $127,512,539 without market adjustments considered. This is approximately $7.7 million more than the initial deposit of $119.8 million.

Silver Bow Creek Reserve Fund Status

Between July 1999 and July 2000, interest revenues from the Silver Bow Creek Account have totaled $701,351. The monthly income amount has averaged $65,000 per month in the last three months. No expenditures have been made from this fund. The book value of the fund is approximately $10.7 million; the market value is approximately $10.3 million. Approximately 99% of these funds are invested in the TFBP, with the remaining balance in STIP. If in the future it is determined that this money is not needed for Silver Bow Creek remediation activities, it will be transferred to the UCFRB Restoration Fund.

MILLTOWN GROUNDWATER RESOURCES

By: Gregory Mullen

Injury Approximately 6.6 million cubic yards of sediments have been deposited in the Milltown Reservoir as a result of the downstream transport of mining and milling wastes from the Butte and Anaconda areas. These reservoir sediments contain hazardous substances at concentrations significantly greater than baseline and have injured the groundwater below. Contaminants are released as water flows through the reservoir sediments, carrying them from the sediments to the underlying alluvial aquifer. The areal extent of the plume of arsenic which exceeds drinking water standards is approximately 110 acres; the volume of the largest contaminant plume (manganese) is approximately 6,500 acre-feet.

Releases of contaminants from reservoir sediments are believed to result from two geochemical processes:

- The reduction of oxide minerals in the lower 15 to 20 feet of sediments.
- The alternating oxidation and reduction of sulfide minerals in the upper 2 to 10 feet of sediments caused by fluctuating water levels in the reservoir. (Montana Power Company's current operating license now limits the water level fluctuation to a maximum of two feet.)

Response Action The Milltown ROD has not been issued and is expected in the year 2001. However, the drinking water services at Milltown which have been contaminated as a result of the hazardous substances in the reservoir have been replaced with an alternative water supply coming from an uncontaminated portion of the aquifer.

River Watch is published by the State of Montana's Natural Resource Damage Program and is paid for out of the UCFRB Restoration Fund. The editorial content is determined by the UCFRB Remediation and Restoration Education Advisory Council. Individual articles are contributed by various persons or entities representing different viewpoints, and the opinions expressed are those of the authors and do not necessarily reflect the opinions of the State of Montana, its agencies or employees

STATE OF MONTANA
DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE PROGRAM
1301 EAST LOCKEY
PO BOX 201425
HELENA, MT 59620-1425

Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

RiverWatch

January 2001 *Volume 2 Number 1*

Know your Advisory Council members...

Jim Flynn, Chair
Anaconda

Sally Johnson
Vice Chair
Missoula

Mary Seccombe
Butte

Chris Marchion
Anaconda

Kathleen Hadley
Deer Lodge

Bruce Hall
Milltown

Gail Jones
Deer Lodge

Jack Lynch
Butte

Pat Munday
Walkerville

Matt Clifford
Missoula

Jan Sensibaugh
Director
MT Dept. of Environmental Quality

Jeff Hagener
Director
MT Dept. of Fish, Wildlife and Parks

Carol Fox
Restoration Program Chief
NRDP/ MT Dept. of Justice

Carole Lankford
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Confederated Salish & Kootenai Tribes

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Find out more, call or write:
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RESTORATION PROJECTS APPROVED

GOVERNOR APPROVES $6.9 MILLION IN FUNDING

In February 2000, the State launched its Pilot Year 2000 grant cycle, which is administered through the Natural Resource Damage Program (NRDP) at the Montana Department of Justice. In December 2000, Governor Racicot approved approximately $7 million for funding of eight projects that involve stream restoration, revegetation, easements, land acquisitions, and the development of a recreational trail corridor and an UCFRB database. The State's *Final Pilot Year 2000 Upper Clark Fork River Basin Restoration Work Plan*, which outlines the approval process and details the approved projects, is available on the Department of Justice website at www.doj.state.mt.us, at local libraries, or upon request from the NRDP (406-444-0205).

Below is a Letter from Chairman Jim Flynn With His Perspective of the Pilot Year.

As the New Year of 2001 begins, we also will start a new application process for the Natural Resource Damage Program. As we begin this second cycle it is a good opportunity to look at where we have been.

Nearly five years ago, a small group of citizens from Bonner/Milltown, Deer Lodge, Butte and Anaconda met at Fairmont Hot Springs to discuss the lawsuit by the State of Montana against ARCO for damages caused by 100 years of copper mining and smelting. A primary concern was how the cleanup would proceed once the suit was resolved. Would all the money be spent in the Upper Clark Fork River Basin? Would there be an opportunity for citizen input? Was there any plan for proceeding with the cleanup? A great amount of uncertainty existed and some concern.

With Governor Racicot's approval last month of the recommended projects for funding as a result of the first grant cycle, many of these questions and concerns have been answered to one degree or another. And answered in a most positive manner. In achieving the progress to date, much time and effort has been expended. The task that faced the State of Montana at the outset, both with the lawsuit itself and the cleanup, had no predecessor to use as a guideline. The size and scope of damages, as well as the settlement to date, are unique to our State and the Nation as a whole.

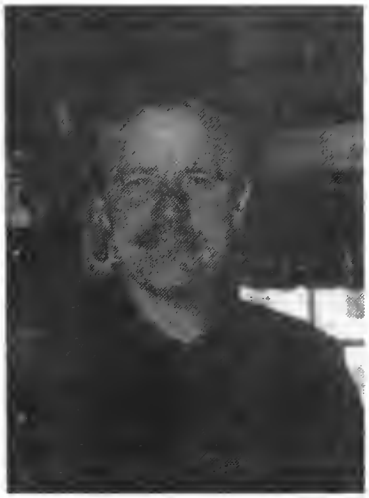
(Continued on page 3)

The next meeting of Upper Clark Fork Basin Remediation and Restoration Education Advisory Council is scheduled for:

Deer Lodge Community Center
Wednesday, February 14, 2001
At 1:00 P. M.

If you would like receive a notice and agenda of the Advisory Council meetings, please contact: Kathy Coleman at 444-0229 or kcoleman@state.mt.us

BIOGRAPHICAL SKETCH OF BRUCE HALL, MEMBER OF THE UPPER CLARK FORK RIVER BASIN REMEDIATION AND RESTORATION EDUCATION ADVISORY COUNCIL



Bruce Hall graduated from the University of Montana with a Bachelor of Arts Degree in Secondary Education with an emphasis in biology and geology. He received an elementary teaching certification in 1983. Bruce taught in the Missoula County School District for 11 years prior to his involvement with community issues beginning in 1994.

A 23-year resident of Bonner School District 14, Bruce was one of the co-founders of the Bonner Development Group, Inc. ("BDG"), a grassroots community organization that incorporated as a not-for-profit in 1995. Bruce served as past president for BDG prior to becoming the executive director in 1996.

In June 1998, Bruce was appointed to the Upper Clark Fork River Basin Remediation and Restoration Advisory Council. Bruce serves as a chairperson of the communication subcommittee.

The goals of the subcommittee include: 1) promoting public understanding and participation in site remediation, restoration, and replacement decisions; and 2) establishing procedures for the public to be informed of remediation and restoration efforts. To this end, the subcommittee is responsible for the quarterly publication of the *RiverWatch* and overseeing the development of an educational outreach program that describes injuries to the resource and restoration, remediation, and replacement efforts under the auspices of the Natural Resource Damage Program.

Bruce is a resident of the Piltzville community where he lives with his wife, Susan, and sons Aaron and Nathan.

NRD Media Presentation: Coming soon to a school near you!

By: Pat Munday

In early October, 2000, the NRDP approved a proposal for a multi-media presentation about the Upper Clark Fork River Basin. The award of $19,772 funds the production and trial presentation of a stand-alone educational module suitable for primary and middle school audiences. Dr. Paul van der Veur, head of the Technical Communication Department of Montana Tech, leads the team that is developing the presentation.

The presentation utilizes PowerPoint® software and is approximately 30 minutes long. Content includes historical information about the importance of copper mining, a description of injuries caused by mining and smelting, an explanation of ongoing remediation efforts, and questions about future restoration goals. The presentation uses text, graphics, photographs, and video to communicate its message. The presentation includes hands-on exercises to reinforce and extend its lessons.

The Upper Clark Fork River Basin Advisory Council issued the request for proposals for a multi-media project in order to fulfill its mission, "to promote public understanding through knowledge." Beginning in January 2001, ten trial presentations will be made throughout the Basin, from Butte to Missoula. The Advisory Council hopes that, through this presentation, students in the Basin will develop a sense of understanding and civic responsibility regarding remediation and restoration of natural resources in the watershed.

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GRANT FUNDS AVAILABLE FOR CLARK FORK RIVER RESTORATION 2001 GRANT CYCLE

By: Kathleen Coleman

Applications are now available for Upper Clark Fork River Basin Restoration Grants. Government agencies, private entities, and individuals may apply for grant funds for projects that will restore or replace the natural resources in the Basin that were injured by hazardous substances released from mining and smelting operations in the area. Grant funds may also be used for developing future grant proposals or for conducting monitoring and research related to restoration of natural resources in the Basin. Only projects that would be located in the Upper Clark Fork River Basin are eligible for funding. A maximum of $6 million in Restoration funds is available for the 2001 grant cycle.

The restoration projects will be funded with the interest generated from the $130 million that the State has recovered to date through settlement of several portions of its lawsuit against ARCO. The suit sought compensation for damages to natural resources in the Upper Clark Fork River Basin caused by decades of mining and smelting in the Butte and Anaconda areas by ARCO and its predecessors.

Applications for the 2001 Restoration Grant Cycle are due to Montana's Natural Resource Damage Program on or before Friday, March 16, 2001. Two application forms are available, the Long Form for applicants requesting more than $10,000 and a Short Form for applicants requesting $10,000 or less.

Applications and guidance materials are available upon request from the Natural Resource Damage Program at the Montana Department of Justice (444-0205) or electronically on the Department of Justice web site at www.doj.state.mt.us.

The State will hold workshops for those interested in applying for Restoration Grants at the following times and locations:

Tuesday, Feb. 6, 2001
Anaconda Community Service Center
9:00 a.m.– Noon

Wednesday, Feb. 7, 2001
Butte Ramada Copper King Inn
9:00 a.m.– Noon

Monday, Feb. 12, 2001
Missoula Public Library
1:00 – 4:00 p.m.

If interested in attending one of the Workshops, please contact Kathy Coleman to register at 444-0229 or email at **kcoleman@state.mt.us**.

CHAIRMAN'S PERSPECTIVE

(Continued from page 1)

A first step in the process was a request to Governor Racicot and Attorney General Mazurek to create a citizen's council with clear recognition and a meaningful role in the decision making process. This request was approved and the Upper Clark Fork River Basin Restoration and Remediation Education Advisory Council was formed. The Council began its work in the summer of 1998 and has spent considerable time meeting at least once a month and often twice a month over the past three years. These meetings centered around becoming familiar with the law and the lawsuit, listening to the public and the technicians, recommending procedures and informing the public of the process.

The Council's work has been supported in a most cooperative manner by the Natural Resource Damage Program. At the outset this support was provided by the legal side of the program, most notably by Rob Collins and Candy West. This past year, the program was expanded to add a restoration side which is administered in an exceptional manner by Carol Fox.

As this process has developed some major points have come to the forefront. The task of restoration is immense, it will take years—decades—to complete and we cannot, at this time, be assured what that completion will be. A comprehensive completion plan is not viable until such time as the entire lawsuit is finalized. It is critical that the monies from the lawsuit be managed in the most prudent manner possible for the long term. Once these monies are expended, restoration will cease since no other monies will be available.

The process now in place is a good starting point to carry us into the future. In addition, there is developing through the Upper Basin a reasonably good understanding amongst the public of what can and cannot be done and why. This knowledge will become more valuable as time goes by. The process will continue to be reviewed and improved upon as time goes by and that will be necessary as more information is available and the remainder of the lawsuit is finalized. For now, those within our state government and those who have participated from the public can take both pride and credit for getting the process to this point in good fashion.

FEATURED ARTICLE:

Previous newsletters have focused on a natural resource injury present in the Clark Fork River Basin, which were subject of the Montana v. Arco lawsuit. This issue will discuss Butte Hill's injured groundwater resources. These resources were included as part of the 1998 settlement with Arco.

BUTTE HILL GROUNDWATER RESOURCES

By: Gregory Mullen

Injury Berkeley Pit, the adjoining underground mine workings, and the bedrock and alluvial aquifers on Butte Hill constitute one of the most contaminated bodies of water in the world, currently containing more than 70 billion gallons of contaminated water. Mining in Butte began before the turn of the century and ultimately resulted in an extensive network of interconnected subsurface workings that included up to 10,000 miles of tunnels and shafts. Groundwater accumulated in these workings because they were below the level of the water table. In order to mine, it was necessary to pump this water from the mine workings.

Open pit mining began at the Berkeley Pit in 1955. When mining ceased in 1982, the bottom of the Pit was 4,265 feet above mean sea level (msl). The total depth of Berkeley Pit, from the bottom to the highest point on the rim, is 1,780 feet. The areal extent of the Pit is approximately 700 acres. Dewatering the mine workings also kept the Berkeley Pit dewatered. Dewatering, however, ended with mining in 1982. Consequently, since then the groundwater has risen toward its pre-mining levels and the Pit and mine workings have been filling with contaminated groundwater. The water level in the Pit in November 2000 was 5,193 feet above msl, which is more than 900 feet above the floor of the pit.

While water level in the Pit and associated bedrock aquifer remains at or below an elevation of 5,410 feet, referred to as the "critical water level", the Pit and the connected underground workings will serve as a hydraulic depression into which Butte Hill's contaminated groundwater will continue to flow. If the water exceeds the critical water level, studies indicate that contaminated groundwater will flow away from the Pit, causing further injury to the Butte ground and surface water systems.

Injury at this site is manifested by concentrations of metals and other chemicals grossly in excess of drinking water standards. Mining-related processes have resulted in the release of hazardous substances, such as arsenic, beryllium, cadmium, copper, lead, mercury, zinc, sulfuric acid, and sulfides of copper, arsenic, zinc and lead to the groundwater. The total volume of injured groundwater in the bedrock aquifer (including the underground workings) was estimated in 1995 to be 119,000 acre-feet. In addition, the Berkeley Pit presently contains some 90,000 acre-feet of contaminated water. The areal extent of the injured groundwater in the bedrock aquifer is about 4,130 acres (6.5 square miles) and in the alluvial aquifer, about 500 acres. When the critical water level is reached, the volume of contaminated water in the Pit is expected to increase.

Groundwater contamination in the bedrock aquifer occurs primarily through the leaching of mineralized material, including sulfide minerals and efflorescent salts remaining in underground workings, and generating acid mine drainage. Acid mine drainage is formed by air and water reacting with mineral rich rock resulting in the release of heavy metals and acidic water. When circulated in the underground workings and bedrock aquifer, acid mine drainage dissolves metal sulfides and releases sulfates and metals to the groundwater.

Other sources of contamination for both the bedrock and alluvial aquifers are waste rock, mill tailings, leach pads, leaching solution (with added sulfuric acid), and mill process solutions. The leaching of exposed ore and mine waste (both by circulating groundwater and added sulfuric acid) also causes injury to groundwater.

Response Action Butte Hill Mine Flooding remedial action seeks primarily to maintain the groundwater in the bedrock system at a certain level, or below that level, to preclude the further release of contaminants into the alluvial aquifer and Silver Bow Creek. The major components of the 1994 Record of Decision (ROD) are:

(Continued on page 5)

May

SCHEDULE FOR 2001 UPPER CLARK FORK RIVER BASIN RESTORATION GRANTS

RESTORATION GRANT APPLICATION WORKSHOPS:

The Natural Resource Damage Program will hold informational workshops for those interested in applying for Restoration Grants for the 2001 grant application cycle at the following times and locations:

Tuesday, February 6, 2001
Anaconda Community Service Center, 9:00 a.m.-Noon

Wednesday, February 7, 2001
Butte Ramada Copper King Inn, 9:00 a.m.-Noon

Monday, February 12, 2001
Missoula Public Library 1:00-4:00 p.m.

If you are interested in attending one of these workshops, please contact Kathy Coleman at 444-0229, or email at kcoleman@state.mt.us to register.

The following is a schedule for when decisions will be made on applications submitted for 2001 Restoration Grants.

APPLICATION DEADLINE & SUBMITTAL:

- March 16, 2001 for Restoration Grants
- Project Development Grants: Open Cycle
- Pre-Application: Open Cycle

FUNDING SELECTION PROCESS:

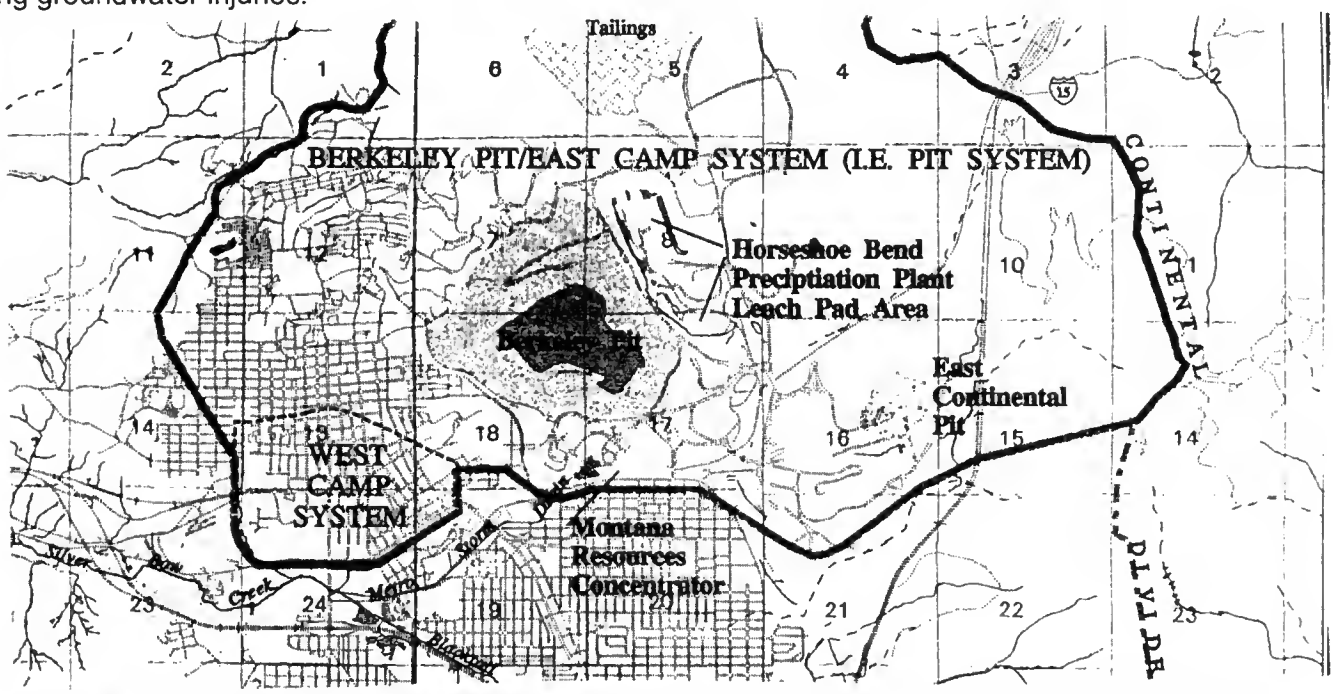
- Screening for Minimum Qualifications – spring 2001
- Project Evaluation and Ranking – summer 2001
- Pre-Draft Restoration Work Plan – summer 2001
- Draft Restoration Work Plan – public comment - fall 2001
- Final Proposed Restoration Work Plan to Governor - December 2001
- Grant Agreement Negotiation – winter 2002
- Funds Available on Reimbursement Basis – spring 2002

Next Cycle: In this second year of the Restoration Grant Cycle, we are relying on the framework established last year in the State's February 2000 *Restoration Plan Procedures and Criteria*, minus some limitations that were specific to the Pilot Year 2000 grant cycle. We will be working with the UCFRB Remediation and Restoration Education Advisory Council and other entities on improvements to the Restoration Grants process that may result in changes to this framework, including grant cycle scheduling changes, to be considered for public comment in late 2001.

FEATURED ARTICLE
(Continued from page 4)

- Permanently controlling and treating 2.4 million gallons of surface water flowing each day from the Horseshoe Bend area toward the Pit;
- Treating Berkeley Pit water once it approaches the critical water level of 5,410 feet;
- Establishing a comprehensive ground and surface water monitoring program; and
- Continuing the treatment of water from the Travona shaft, located less than a mile northeast of Butte's waste water treatment plant, to maintain groundwater levels in that area.

Keeping the water level below the 5,410-foot level will prevent water from entering and contaminating the area's alluvial aquifer. The Environmental Protection Agency (EPA) estimates that this level may be reached by the year 2020. Pumping and treating water will not address the continued infiltration of contamination from the existing mine tunnels and other surface and subsurface sources. Consequently, groundwater in both the alluvial and bedrock aquifers in the Butte Hill area and in the Berkeley Pit may continue to be contaminated above drinking water standards for thousands to tens of thousands of years. Treating this water will result in the daily production of hundreds of tons of sludge. Laboratories in Butte and elsewhere in the country are examining Butte groundwater's chemical and biological constituents to develop alternative treatment technologies. Future water treatment innovations may be helpful in addressing groundwater injuries.



Clark Fork River and Milltown Reservoir Feasibility Studies In Review

By: Mark Kerr

EPA has recently released two feasibility studies for the Milltown Reservoir Sediments NPL Site: the *Milltown Reservoir Sediments Site Draft Focused Feasibility Study* (MR FFS) and the *Milltown Reservoir Sediments NPL Site, Clark Fork River Operable Unit Draft Feasibility Study Report* (CFR FS). The MR FFS was released on November 16, 2000. Public comments on the MR FFS were to be submitted to EPA by January 2, 2001. If you were unable to submit comments by that time, there will be further opportunity to comment following the release of the "Draft Combined Feasibility Study and Focused Feasibility Study" this spring, which will merge the Focused Feasibility Study and the original Feasibility Study for Milltown Reservoir. There will also be a formal public comment period following the release of the Proposed Plan, which is anticipated to happen early this summer. The draft CFR FSwas released in late December 2000. This draft is primarily for agency review; however, interested members of the public may also comment on this version. Following agency review, the CFR FS will be released for public review and comment, probably in late winter/early spring of 2001.

CLARK FORK RIVER BASIN TOURS

By: Gregory Mullen

The nice fall weather provided a great opportunity for the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council (Advisory Council) and area Legislators to tour various locations in the Upper Clark Fork River Basin.

On September 13, 2000, the Advisory Council toured Milltown reservoir. The tour started at the dam site with a walk through the facility. Russ Forba, with the US EPA, explained to the group the history of the dam, the remedial investigation status and dam safety. The Milltown Proposed Plan and Record of Decision are expected by fall of 2001.

On September 28, 2000, members of the Natural Resource Damage Program's Legislative Oversight Committee toured several locations within the Clark Fork Superfund Site and got a first hand look at locations of Pilot Year 2000 Restoration Grant Projects. Members on the Legislative Oversight Committee include Representative Gary Beck, Representative Roger Sommerville, Senator Dale Mahlum, and Senator Mike Halligan. Senator Dan Harrington of Butte and Advisory Council Chairman Jim Flynn joined the Oversight Committee on the tour.

The tour started along Silver Bow Creek with Joel Chavez of the Montana Department of Environmental Quality (DEQ) discussing the remedial efforts in that area. Remedial actions have removed tailings and created a new stream channel along the first mile of Silver Bow Creek. Next year DEQ plans to continue remediation along the next two miles of the creek.

The group also heard about a few of the restoration proposals that were recently approved for funding by Governor Racicot. Dori Skrukrud, with the Greenway Authority Board, discussed the Greenway Project and how that project will coordinate with remediation. Gregory Mullen outlined the restoration actions planned with the implementation of the Greenway and Bighorn Environmental restoration projects. The Greenway project, funded for $1.77 million, will concentrate on revegetation and a trail corridor along the first three miles of Silver Bow Creek. The Bighorn Environmental project, funded for $110,000, will concentrate on revegetation along the first mile of Silver Bow Creek. Remedial and restoration efforts along Silver Bow Creek should provide a valuable recreational and wildlife habitat corridor in the near future. Aquatic life will also benefit from these efforts, although these improvements may take some time.

The next stop on the tour the group visited a portion of the 9,000-acre Watershed Land Acquisition proposal west of Anaconda. This project was funded for $3.7 million. Jerry Wells, contractor for the Rocky Mountain Elk Foundation, outlined the benefits of this project. The tour ended on Lost Creek with a discussion of the $500,000 Lost Creek restoration project led by Eric Reiland with Montana Fish, Wildlife and Parks.

On October 18, 2000, Advisory Council members toured the newly remediated areas of Silver Bow Creek.

Advisory Council Members at Milltown Dam

TMDL's IN THE UPPER CLARK FORK RIVER BASIN

By: Jim Bauermister and Ron Steg

Ron Steg of the Montana Department of Environmental Quality (DEQ) gave an "Introduction to Total Maximum Daily Loads" (TMDLs) in the Upper Clark Fork River Basin at the Advisory Council's September 13, 2000 meeting in Missoula. The following article provides a summary of his presentation on this watershed-planning tool that is required by the federal Clean Water Act.

Rivers, lakes and streams that fail to meet water quality standards are put on the state's 303(d) List of Impaired and Threatened Waterbodies. There are generally two ways to remove a waterbody from this document: 1) a reassessment shows the water is not impaired or more data is needed; or 2) prepare and implement a water quality plan approved by the Montana Department of Environmental Quality (DEQ) and U. S. Environmental Protection Agency (EPA).

In order to meet the deadline established by State law and meet the intent of a recent federal court order, DEQ has prepared a schedule to develop water quality restoration plans for every impaired waterbody on the 1996 Montana 303(d) List by 2007. For planning purposes, the DEQ has divided the state into 91 watershed planning areas. In most cases, DEQ uses the planning areas established by existing watershed groups.

A *water quality restoration plan* is a resource management strategy for activities that impact water quality, quantity and uses in a watershed. A local watershed group often develops the plan with support from the conservation district, cooperative extension service and state and federal agencies such as DEQ, DNRC, FWP, U.S. Forest Service, NRCS, BLM, etc. A watershed plan may address a specific problem (excess nutrients for example) or it may take a *holistic* approach in which multiple resources are managed.

Impaired water bodies don't support one or more beneficial uses. Beneficial uses include drinking water supply, recreation, industry, agriculture, wildlife, fish and aquatic life. Most Montana surface waters are classified as suitable for all beneficial uses. DEQ makes a "Beneficial Uses Determination" for a water body for which it has "Sufficient Credible Data." This process is known as SCD/BUD (pronounced scud-bud.)

Total Maximum Daily Loads (TMDLs) are a component of a water quality restoration plan. The technical definition of a TMDL is: *the total amount of pollutant that a waterbody may receive from any source without exceeding water quality standards.* For point source pollutants, such as metals, nutrients and bacteria, the conventional TMDL works pretty well. These pollutants can be measured in units such as parts per million or milligrams per liter that can be extrapolated into a daily load calculation. A TMDL calculation includes a margin of safety and accounts for seasonal variations and contributions from all point, nonpoint and natural sources.

However, the dispersed and erratic nature of nonpoint pollution makes it difficult, if not impossible, to calculate a **daily** load. Take sediment for example. Most sediment delivery to a stream occurs after heavy rainfall or rapid snowmelt. Much of the year the stream may look clean. Yet the sediment still impairs beneficial uses. Other non-point source impairments such as low stream flows, water temperature, nutrients and bacteria may also be very seasonal. For these impairments, a *surrogate* is substituted for a TMDL. A surrogate may be "summer water temperatures no greater than 70° F" or "stream flow not less than 10 cubic feet per second." Since most water quality impairment in Montana comes from nonpoint sources, nearly all watershed restoration plans rely on surrogates.

Targets are the backbone of a water quality restoration plan. Targets differ from goals in that targets are specific and quantifiable while goals are usually statements of intent or purpose. For example, the goal of a watershed plan might be "the restoration of a cold water fishery with emphasis on the return of native trout species." The plan's targets, which would be directed at achieving the goal, might be 1) reducing sediment by 50 percent; 2) increasing redds (fish spawning nests) by 135 percent; and 3) stabilizing 3000 feet of a 6000 foot erosive streambank.

(Continued on page 9)

THANKS JACK!

By: Mary Seccombe

The members of the Governor's Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council would like to take this opportunity to thank Jack Lynch for all of his input, advice, participation and efforts on behalf of the Council; also, for his participation as a member of the Advisory Subcommittee. Since Jack did not run for re-election as Chief Executive of Butte-Silver Bow this past year and his term of office has been completed, his term on the Council as a representative of local government is finished.

Jack was truly a dedicated leader on the Council with his input and advice, especially in the face of many difficult decisions. Jack worked with ARCO on the Superfund cleanup in Butte-Silver Bow and knew all of the aspects of the cleanup and what would be needed in addition to the Superfund cleanup to help to restore this part of the State to the extent possible. He was very familiar with the damage throughout the Upper Clark Fork River Basin. He spent many hours working with ARCO, the State Department of Environmental Quality, Superfund personnel, and our own Upper Clark Fork Advisory Council.

With all of his administrative background, he was truly an asset to the Council and the duties with which we were faced. Jack, we appreciate the many hours and leadership you brought to the Advisory Council. Thank you for being willing to serve on the Advisory Council and for the dedication you gave to this task and for your helpfulness to the other members of this Council,. You will be missed. We wish you well in whatever the future holds for you. Good luck!

CLARK FORK RIVER LITIGATION UPDATE

By: Rob Collins

When the State of Montana entered into the $215 million settlement with ARCO, which was approved by the Court in 1999, it did not settle the entire lawsuit. The State retained three of its restoration damage claims: The Clark Fork River, $86.4 million; Butte Area One, $79.5 million; and the Anaconda Uplands, $15 million. The court-approved settlement, however, provides that the State may not further litigate these claims until the Record of Decision ("ROD") for the site has been issued by EPA and there has been a good faith attempt to settle the claim with ARCO. The only site for which a ROD has been issued is the Anaconda Uplands. The ROD for the Clark Fork River is expected to be issued in late 2001 or early 2002, and the ROD for Butte Area One, i.e., the Butte Priority Soils Operable Unit, is not expected to be issued until the year 2002.

In the summer of 1999, the parties attempted to settle the State's claim for the Anaconda Uplands. Those discussions were unsuccessful and since that time, the State has been attempting to bring its claim for that site to trial. The schedule issued by the Court, however, was vacated as a result of the death of the judge handing the case, the Honorable Paul Hatfield, on July 3, 2000. Subsequently, the parties stipulated to the assignment of Magistrate Judge Richard Cebull to the case. Thereafter, it was agreed that rather than immediately proceeding to trial, the parties would brief and argue the numerous legal issues that have been raised regarding the State's claim. The briefing is scheduled to be concluded early this year and a decision on the legal issues is expected during the early spring. Assuming that decision is favorable to the State, the court will set a schedule for retrying the State's injury claim involving this site and for trying the restoration damage claim.

While the other two claims remain subject to the Court's stay, the NRDP has also been working on various matters relating to them. For example, it has been involved in coordinating and consulting with EPA during the Clark Fork River Operable Unit RI/FS process and has been involved in technical studies related to the issues involved in the claim. The State has also been considering whether or not it should revise its restoration claims for the Clark Fork and Butte Area One sites in light of the additional information that has been developed since 1995, when those claims were established, and in consideration of what the expected RODs for those sites will be.

Finally, since these three remaining claims cannot be resolved prior to June 30, 2001, the NRDP will be seeking additional funding from the Legislature during the 2001 session so that it may pursue these claims during the next biennium.

TDML's

(Continued from page 7)

So, what does this all mean for the Upper Clark Fork River Basin? In accordance with the recent federal court order, water quality restoration plans (i.e., TMDL's) will need to be prepared for 71 Water Quality Limited Streams (WQLS) within the Basin. The Basin has been divided into five TMDL Planning Areas (i.e., Little Blackfoot, Upper Clark Fork, Flint Creek, Rock Creek, and Clark Fork-Drummond) to facilitate focused efforts towards completion of these water quality restoration plans by 2007. A great deal of work is already ongoing (e.g., most notably the Clark Fork Voluntary Nutrient Reduction Program where in-stream nutrient targets have been established for the main stem of the Clark Fork); however, the issues in the Basin are very complex ranging from Superfund involvement associated with metals contamination from past mining activities to flow problems associated with diversions, dams and irrigation. For these reasons, water quality restoration planning efforts will require a significant multi-agency coordination effort. Also, given a checkerboard of public and private land ownership within the Basin, landowner involvement is imperative. The Lost Creek Watershed Project that will be funded partially with UCFRB Restoration funds is an example of this multi-agency and landowner coordinated effort.

Additional information regarding Montana's 303 (d) List and the TMDL Program is available on the DEQ's website at www.deq.state.mt.us.

Legislative Oversite Committee Members Along Silver Bow Creek

Legislative Committee Members Visit Watershed Land Acquisition

YOUR INPUT IN *RIVER WATCH* IS DESIRED

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *RiverWatch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *RiverWatch* article or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0229 or email kcoleman@state.mt.us

STATE OF MONTANA
DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE PROGRAM
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PO BOX 201425
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Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

RiverWatch

May 2001 *Volume 2 Number 2*

Know your Advisory Council members...

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Vice Chair
Missoula

Mary Seccomba
Butte

Chris Marchion
Anaconda

Kathleen Hadley
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Bruce Hall
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SILVER BOW CREEK RESTORATION IN COORDINATION WITH REMEDY

By: Gregory Mullen

Stream reconstruction and wildlife habitat creation are occuring this spring in a coordinated fashion on the first mile (Reach A) of Silver Bow Creek. The Department of Environmental Quality (DEQ) is coordinating its remedial efforts with two restoration projects funded by Natural Resource Damage monies—the Greenway and Bighorn Environmental. Thanks to the remarkable coordination efforts by DEQ and its revegetation contractor, Richard Prodgers, it is difficult to tell that the projects are actually three separate projects.

DEQ's remedial effort includes planting 11,000 willows and wetland plants on the newly constructed banks of the Silver Bow Creek; seeding the floodplain of Reach A; planting another 3,000 willows and 5,000 wetland plants in the floodplain. Although these remedial actions will greatly enhance bank stability, these actions will not restore the floodplain. Additional plantings planned under the Bighorn Environmental and Greenway projects will greatly enhance the remedial work and assist in restoring this area.

(Continued on page 6)

Area at Silver Bow Creek showing newly applied organic matter

See Special Insert for a summary of the 2001 Grant Proposal Abstracts

BIOGRAPHICAL SKETCH OF GAIL JONES, MEMBER OF THE UPPER CLARK FORK RIVER BASIN REMEDIATION AND RESTORATION EDUCATION ADVISORY COUNCIL

Governor Racicot appointed Gail Jones to the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council to represent local governments located within the Basin. Ms. Jones was born and raised in Butte and, after a five-year period in the Bitterroot, moved to the Deer Lodge Valley to make her home. She is very familiar with the issues and the residents of the area.

Gail is currently in her eighth year as Powell County Commissioner. Prior to that, she served two years on the Deer Lodge City Council. When Gail was elected to the Board of Commissioners, she had two goals in mind. The first was the creation of a Comprehensive Plan for Powell County and the second was the implementation of an active health board. Both have been accomplished and both relate directly to many of the issues associated with the Upper Clark Fork Basin.

In her years as commissioner, Gail has served on numerous boards including, Headwaters RC&D treasurer, District 12 chair for MACO, and the Public Health Improvement Ask Force. She is active in her local church and looks forward to more visits with her children and grandchildren who live outside of Montana.

" It was an honor to be appointed to the Upper Clark Fork Advisory Council," Gail states. "Hopefully my knowledge of the Basin and its residents, along with my responsibilities and experience, will bring to the Council the interests of those who live and work on the land."

WATCHING THE RIVER FLOW

By: Pat Munday

We all share the watershed. Through the waters of the Clark Fork River, children from Missoula to Butte and Anaconda are all linked together. That has been just one learning outcome from the Upper Clark Fork River Basin Multi-media Educational Project.

The Communication Sub-committee of the Advisory Council has sponsored media presentations in various schools throughout the basin, including Missoula, Bonner/Milltown, Gold Creek, Garrison, Deer Lodge, Anaconda and Butte. The presentation features an interactive CD-ROM about the history of mining and smelting, resulting damages to natural resources, the development of the Natural Resource Damage Program, and ongoing remediation and restoration work.

Initial presentations have been primarily to 4th and 8th grade classes. After an introduction about the history of mining and smelting, children see a map of the Clark Fork River projected onto a screen. The map is interactive. Clicking on the locations of Butte, Warm Springs Ponds, Anaconda, or Milltown opens up a program about these areas.

The presentation includes voice narration by children, aerial video of selected sites, slides, and graphics. Children especially enjoy "The Bug Hunter's Club," a site-specific exercise where viewers can identify and count various aquatic organisms to assess water quality.

(Continued on page 6)

The next meeting of Upper Clark Fork Basin
Remediation and Restoration Education Advisory Council is scheduled for:
Wednesday, June 13, 2001 at 1:00 P. M.
Deer Lodge Community Center
If you would like receive a notice and agenda of the Advisory Council meetings, please contact:
Kathy Coleman at 444-0229 or kcoleman@state.mt.us

SUCCESSFUL OUTREACH EFFORT ON CONSERVATION EASEMENTS

By: Gail Jones and Carol Fox

"A valuable tool to have in the tool box" was a common message heard about conservation easements at a recent panel discussion held on March 22, 2001 in Deer Lodge. The Upper Clark Fork River Basin (UCFRB) Remediation and Restoration Education Advisory Council ("Advisory Council") and the Natural Resource Damage Program ("NRDP") sponsored this panel discussion in an effort to learn more about easements and their role in UCFRB restoration activities. A panel of seven speakers representing farmers, ranchers, state agencies and conservation organizations discussed varying views on the pros and cons of conservation easements and whether UCFRB Restoration funds should be used to purchase easements.

Rock Ringling, a Managing Director of the Montana Land Reliance, opened the discussion with background on the nuts and bolts of conservation easements—what they are, how they work, and how easements can benefit landowners.

A conservation easement is a restriction that is attached to land. It is a voluntary, legally recorded agreement between a property owner and a government agency or a qualified conservation organization. Easements typically maintain the land's traditional uses, such as farming and ranching, while generally prohibiting or limiting uses, such as subdivision or surface mining, that would diminish the conservation value of the land. An easement's terms are legally binding on future landowners. Financial benefits to the landowners can include a cash payment and/or reduction in estate taxes, income taxes, or in some cases, property taxes. Private ownership is retained.

Rich Clough, Chief of Operations at the Montana Fish, Wildlife and Parks, spoke on the benefits of easements to water quality, fish and wildlife habitat and populations, the agricultural community, and the public. He offered examples of situations when conservation easements would be a worthwhile use of UCFRB Restoration funds, such as protecting restored lands or protecting the overall health of the Clark Fork watershed.

Mark Simonich, Director of the Department of Commerce and previous Director of the Department of Environmental Quality, reviewed the basics of the Natural Resource Damage lawsuit and explained how easements can replace injured natural resources or lost uses. He suggested asking, "Is the easement the right use at the right time?" He advocated a "stepwise" approach of first seeing what can be done to improve injured resources under Superfund remediation, then determining what can reasonably be done to restore injured resources, and after that, consider replacing resources that cannot be fully restored.

Jim Berkey of the Five Valleys Land Trust reviewed the numerous benefits that easements can provide, focusing on how they are mutually beneficial for natural resources and productive working farms, ranches and forests. He noted difficulties associated with easements being perpetual documents, whereas the land, economy, community and easement partners will change over time. Jim believes easements are "potentially a very useful and appropriate use of UCFRB Restoration funds, since easements can be a cost-effective and long-term tool for resource protection."

John Hollenback of Gold Creek, an area rancher familiar with easements, noted that while easements have some worthwhile benefits, he believes easements are sometimes done for the wrong reasons and without enough planning for something locked into perpetuity that may not work for future generations. He suggests flexible easements such as term easements that "allow for reasonable changes because we cannot be predictive of perpetuity." John believes UCFRB Restoration Funds should be focused on restoring impacted lands in the Basin. "Easements can be a part of that effort, but should not be the main focus for these dollars," he concluded.

The two area ranchers on the panel with easements, Barbara Clark of Rock Creek and David Mannix of Helmville, both related positive experiences with the easements they have.

(Continued on page 5)

River Watch is published by the State of Montana's Natural Resource Damage Program and is paid for out of the UCFRB Restoration Fund. The editorial content is determined by the UCFRB Remediation and Restoration Education Advisory Council. Individual articles are contributed by various people or entities representing different viewpoints, and the opinions expressed are those of the authors and do not necessarily reflect the opinions of the State of Montana, its agencies or employees.

FEATURED ARTICLE:

Previous newsletters have focused on natural resource injuries present in the Clark Fork River Basin, which were subject of the Montana v. Arco lawsuit. This issue will discuss Area One groundwater and surface water resources.

AREA ONE GROUNDWATER AND SURFACE WATER RESOURCES

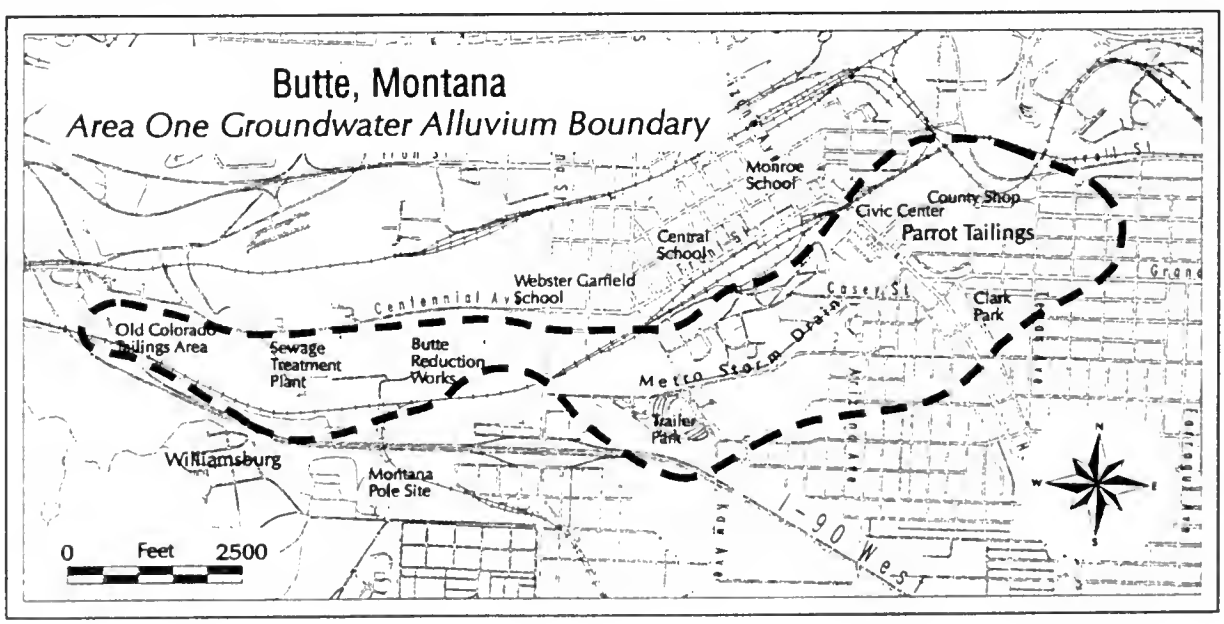
By: Gregory Mullen

Injury The deposit of wastes in Butte from mining and mineral-processing operations has contaminated both ground and surface water resources of Silver Bow Creek have occurred due to The last *River-Watch* newsletter discussed the bedrock aquifer in Butte. This article focuses on the alluvial aquifer in Area One, which is located in the southern part of the Butte Priority Soils Operable Unit (BPSOU).

The groundwater is contaminated by heavy metals including cadmium, zinc, iron, lead, copper, arsenic. These metal concentrations exceed drinking water standards. The extent of this contamination in the alluvial aquifer is estimated to be about 560 acres. The total volume of injured groundwater is about 10,000 acre-feet, and the discharge into Silver Bow Creek is over 2,000 acre-feet per year, or three cubic feet per second (cfs).

Silver Bow Creek is continually contaminated by the discharge of contaminated groundwater and surface runoff. The Metro Storm Drain receives surface runoff during snowmelt and storms and intercepts contaminated groundwater. Groundwater in the Metro Storm Drain area flows towards the lower sections of Area One and discharges to upper Silver Bow Creek. The groundwater has been contaminated from old smelter tailings such as the Parrot Tailings located east of the Civic Center. Contaminated surface water in Silver Bow Creek flows downstream from Area One and is a source of the hazardous substances that damage aquatic resources downstream. Other sources of contamination exist from other tailings in Area One and from drainages in Butte. Some of these sources have been removed over the last decade as discussed below.

Response Actions EPA-required removal actions, which have reduced the metals entering Area One, have been implemented in the Butte area. These removals include storm water removal actions in Missoula Gulch, Alice Pit, Buffalo Gulch and the Kelley Mine Yard area. Also, in 1997, some 1.2 million cubic yards of tailings and contaminated soils were removed from the Colorado and Butte Reduction Works area (west end of Area One). Currently, ARCO and state and federal agencies are evaluating potential groundwater capture, extraction and treatment alternatives for Area One. A record of decision for the entire BPSOU is expected in late 2002.



~ SPECIAL INSERT ~
YEAR 2001 GRANT PROPOSAL ABSTRACTS

The following are abstracts submitted to the Natural Resource Damage Program for Year 2001 Restoration Grant funds. These projects are verbatim as submitted by applicants.

Applicant Name: Montana Council of Trout Unlimited

Project Title: Antelope and Wood Creek Riparian Management Project

Project Description and Benefits:

The Antelope and Wood Creek Riparian Management Project will replace the equivalent of injured natural resources in the Upper Clark Fork River Basin by improving riparian habitat conditions, stream stability and westslope cutthroat trout habitat on two overgrazed stream reaches. Both Antelope and Wood Creeks are tributaries to the Clark Fork River. The entire length of Antelope Creek was historically over-grazed, contributing to channel instability, excessive sediment and nutrient loading, and degraded fisheries habitat. The lower reaches of Wood Creek have been overgrazed while the upper reaches remain in fair condition. Antelope and Wood Creeks contain genetically pure westslope cutthroat trout and sampling found only native species assemblages in both drainages. The landowner allows public fishing access on both creeks.

The riparian management project has two phases: 1.) develop a riparian management system to protect and enhance the overgrazed areas; and 2.) revegetate the riparian areas after livestock exclusion. Phase I, which includes installation of riparian fencing along the creeks and preparation of a grazing management plan, was finished in 2000 through a partnership among Montana Fish, Wildlife and Parks (FWP), USDA Natural Resources Conservation Service (NRCS) and the landowner. Phase II, revegetation, will take place in Spring of 2002 through the cooperation of Montana Trout Unlimited, FWP, NRCS, Montana Power Company and the landowner. Montana TU is involved with Phase II of the project because of an interest in native fish conservation, past experience with similar projects and its ability to generate high-quality volunteer labor. The project fits TU's mission to conserve, protect and restore Montana's coldwater fisheries and their watersheds.

This application seeks funding to complete the revegetation phase of the project. Revegetation will greatly expedite the stream recovery process. The restored riparian conditions of Antelope and Wood Creek will improve spawning, rearing and overwintering salmonid habitat, leading to an increase in native trout populations. The westslope cutthroat population enhanced by this project can help replace those that have been injured upstream, including in areas that have been subject to settlement of NRD claims and EPA Superfund decisions.

Applicant Name: Butte-Silver Bow Local Government

Project Title: Drinking Water Infrastructure Replacement

Project Description and Benefits:

Due to the adverse impacts of mining from the Berkeley Pit and the underground mines, the groundwater aquifers in portions of Butte can never be used for drinking. The NRD assessment estimates for lost groundwater resources on the Butte Hill alone exceed 5,000 gallons per minute – about the average amount of water used by all Butte citizens on a typical day (except during sprinkling season). Consequently, to protect human health, use of existing groundwater wells is limited and there are prohibitions on new wells in certain areas.

At the same time, Butte-Silver Bow ratepayers have invested over $40 million in the past decade to restore and replace its drinking water system – a complex infrastructure to import water from across the Continental Divide and from the mountain creeks surrounding Butte. These investments were unconditional and mandatory: There were no alternative sources to develop since the local groundwater is permanently damaged, and neglected improvements by the previous owner had led to federal orders to upgrade the system.

More work is needed. Butte-Silver Bow proposes a fifteen-year program to make essential improvements to the system, particularly the need to replace deteriorated (e.g. leaking, corroded, undersized) distribution lines in the neighborhoods where groundwater use is restricted. The proposed 15-year project would result in a coordinated, annual replacement program to respond to precise areas where deficiencies are creating the most problems.

As Phase One of the project, Butte-Silver Bow requests $1.166 million in NRD funds in 2001, and pledges $541,000 in matching funds to replace approximately 17,000 feet of distribution lines. Over 15 years, up to 255,000 feet of distribution pipes would be replaced to provide better service to those citizens who cannot use the groundwater. This long-term investment will fulfill essential priorities and also achieve effective coordination with applicable NRDP requirements.

Applicant Name: Montana Economic Revitalization & Development Institute (Merdi)

Project Title: East Butte Redevelopment

Project Description and Benefits:

Butte-Silver Bow's twenty year plan calls for the "Restoration of the Mining City's Neighborhoods." As a first step in this long-range plan MERDI, the project sponsor, and Project Green, the local citizen advisory committee, are seeking funding from the NRD Program for the first phase of the East Butte Redevelopment Project. This project restores a 23-acre site that lies directly across from the Berkley Pit on Continental Drive and runs south of East Mercury Street to Ohio Street.

The project combines the goals of urban revitalization and renewal with those of land restoration. The three objectives of the proposal are:

- To restore the land so that it will support healthy plant communities, thus eliminating storm water run-off and developing bird and terrestrial animal habitat.
- To develop a beneficial land use that supports Butte's Historic Landmark District and the abutting neighborhoods.
- To replace a portion of the recreational services lost or impacted as a result of mining impacts in the area.

To achieve the goals and objectives a 23-acre manicured park complete with sprinkling system, grass, trees and shrubs will be constructed. MERDI has, over the last two years, restored four of the 23 acres, leaving 19 acres to be addressed under this proposal. The park's design also calls for trails and picnic areas. The park will provide easily accessible recreational services, especially for Butte's senior citizens and the residents of Silver Bow Homes. The new Belmont Senior Citizen's Center is adjacent to the park area and Silver Bow Homes lies one block to the west from the proposed park.

Applicant Name: Watershed Restoration Coalition of the Upper Clark Fork

Applicant Title: East Deer Lodge Valley Watershed Project

Project Description and Benefits:

The East Deer Lodge Valley Watershed Project is a critical replacement project proposed by the Watershed Restoration Coalition of the Upper Clark Fork (WRC). The 121,000-acre project area includes 10 subwatersheds in five HUCs that flow into the main stem of the Clark Fork River. The area supports important fisheries, a host of recreation opportunities, a wide variety of wildlife, a large agricultural economic base, and rural living for area residents Based on acreage, over 80 percent of the landowners and managers are participating on this project. Baseline data for multiple indicators suggest that nearly all of the riparian corridors are non-functional to functional at risk, resulting in thermal modifications, loss of habitat, fishery degradation, and other impacts. In addition, over 50,000 acres of native range are in poor to fair condition according to a recent field survey. This project takes important steps at correcting these natural resource impacts by applying much needed BMPs and prescribed practices in the project area. The implementation goals of the project are to improve riparian habitat and fisheries with 5.4 miles of riparian forest buffer planting, 16.3 miles of riparian fencing and grazing management, 18.3 miles of water pipeline connected to off-stream water supplies, placement of 41 off-stream stock water tanks in upland areas, installation of 9 stock water wells, and installation of 3 water gaps. Work in riparian zones also includes restoring 532 acres of wetlands and setting up permanent easements for the areas. For uplands and wildlife enhancement, this project will establish conservation plans on 55,855 acres with prescribed grazing, installation of 17 miles of cross fencing for grazing rotation, complete critical planting on 452 acres, and install about 1.5 miles of shelterbelts for improved songbird and wildlife habitat.

Benefits include: 1) water quality improvement through reducing sedimentation by 15 percent in all tributaries, reducing nutrient loading with fewer cattle in the flood plain, and removing 30,000 cubic yards of metal-contaminated sediment impacting the headwaters of Cottonwood Creek, 2) improved fisheries on about 53 miles of small stream tributaries, 3) improved recreation opportunities through future cooperative agreements, and 4) improved wildlife habitat. This project establishes a crucial link between landowners taking on responsibility for application of BMPs, the WRC providing local leadership, the NRCS providing implementation staff, and funding needed to implement natural resource improvements. This project is designed as a replacement project; however, indirect restoration benefits may be realized in the Clark Fork River through improved water quality and fisheries. Goals of this project will be achieved through a cooperative partnership between 44 landowners, state and federal land managers, state and federal agency personnel, and stakeholders. The NRDP provides 36 percent of the $1.76 million dollar budget resulting in an excellent cost/benefit ratio.

Applicant Name: Greenway Service District

Project Title: Silver Bow Creek Greenway

Project Description and Benefits:

Funding to develop and construct restoration improvements within the Silver Bow Creek Corridor over the same period established for remedial work, with restoration design submittals and expenditures made commensurate with progress and workplans for remedial action.

The proposal presents a discussion of the Greenway project and a detailed funding request for 1) restoration work in Reach D and E of Subarea 1 of the Streamside Tailings Operable Unit (SSTOU); and 2) a comprehensive plan for the land/easement acquisition requirements for the entire Silver Bow Creek Corridor.

The project is directly consistent with the stipulations of the SSTOU's Record of Decision and is based on the applicant's preliminary design plan to develop a sound strategy for restoration enhancements, protection and beneficial use of the Silver Bow Creek Corridor.

The project will restore and rehabilitate natural resources that suffered severe and widespread injury as a result of area mining and begin to replace those lost or impacted services within the corridor and assure that these restorative components are protected through management of the Silver Bow Creek Greenway, by:

- Restoring aquatic, riparian/wetland and uplands ecosystems;
- Acquiring and providing public access to a passive recreational corridor; and
- Implementing remediation and restoration activities as one project.

Tasks include:

- Design and construct in-stream structures and streambank enhancements to promote the restoration of a self-sustaining fishery;
- Amend soils to accelerate growth, vigor and stability of vegetation;
- Plant additional varieties and quantities of native plants to enhance ecosystem diversity;
- Introduce upper story plantings to improve aquatic and terrestrial ecosystems;
- Develop controlled public access to protect the remediated and restored landscape and manage passive recreational activities.

The project is predicated on the firm belief that coordination of remedial and restoration activities will lead to lower project costs and considerable savings of settlement proceeds.

Applicant Name: Rocky Mountain Elk Foundation

Project Title: Watershed Land Acquisition

Project Description and Benefits:

The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres of land in the Upper Clark Fork River Basin from the YT Timber Company. The property is located between Anaconda, Mt., and Georgetown Lake and makes up the bulk of the Warm Springs Creek drainage not already in public ownership. The property has high public values including habitat for native fish (bull trout and westslope cutthroat trout), critical big game winter range, alpine lakes and wetlands. RMEF applied for a $6.075 million grant from the Upper Clark Fork River Basin (UCFRB) Restoration Fund in April of 2000 to acquire nearly 9,000 acres of the property for the State of Montana. The UCFRB Advisory Council and initially, the NRD staff, recommended funding the entire $6.075 million, however, based on financial constraints, the Trustee Council recommended, and the Trustee awarded, $3.764 million in December, 2000. RMEF conveyed 5,790 acres to the State of Montana in February, 2001. RMEF is now applying for $2.066 million from the UCFRB to acquire approximately 3,178 acres and complete the State portion of the acquisition. The remaining 23,500 acres is targeted for purchase by the U.S. Forest Service (U.S.F.S.) using Federal Land and Water Conservation Fund (LWCF) dollars. Five million dollars has been appropriated from the LWCF program for 2001 and will be available in the spring of 2001. The State portion of the acquisition is located in close proximity (less than five miles) to the damaged Anaconda Uplands and Opportunity Ponds. Acquisition of the State portion of the property will replace soil, vegetation and wildlife habitat related services lost in the Upper Clark Fork Basin including services lost in the Anaconda Uplands from smelter emissions and lost in and beneath the Opportunity Ponds from hazardous materials. Acquisition of the Watershed Property by public entities will benefit water quality in Warm Springs Creek, the major tributary of the Upper Clark Fork River and aid in the restoration of the river. Habitat for the endangered bull trout and the westslope cutthroat trout and spawning areas for brown trout will be enhanced or maintained with the Watershed Land Acquisition.

A critical linkage for wildlife between the Flint Range and the Pintlar Range will also be protected from development. The Watershed Land Acquisition project is a partnership between the RMEF, the State of Montana and the U.S.F.S. The first phase of the purchase option was exercised in December of 2000 which required RMEF to borrow $2 million until the UCFRB Restoration Fund dollars became available and transactional details were worked out. Funding of the acquisition of the remaining land targeted for state ownership will be crucial to exercising the next phase of the option.

Applicant Name: County Water and Sewer District of Rocker

Project Title: Rocker Water Reclamation and Habitat Enhancement Project

Project Description and Benefits:

The project entails the construction of four wetlands ponds and an ultraviolet disinfection system to accept treated wastewater from the community of Rocker wastewater treatment plant. Two constructed wetlands, located above the Silver Bow Creek floodplain, will include lined impoundments planted with indigenous plants accepting disinfected wastewater effluent. Following these two cells, water will flow to two natural wetlands built within the groundwater table, in proximity to Silver Bow Creek. Wastewater will flow from these cells into Silver Bow Creek or seep into the adjacent recharge zone. Local surface drainage will be diverted to the lower two wetland cells, to allow treatment of storm runoff which would normally enter the creek directly. The wetlands will be effective in removing sediments (and metals associated with those sediments) which are carried in the storm drainage. The project construction will be coordinated with the Streamside Tailings Removal Project as well as the Silver Bow Greenway Project in a manner to optimize benefits of all projects and reduce cost. The Rocker project will also include the use of trails, viewing areas, islands and peninsulas to maximize the recreational opportunities of an area that will attract wildlife, particularly waterfowl. The project includes the construction of an ultraviolet disinfection system to replace the existing gas chlorination system which, by location, cannot be used for the proposed wetlands cells. Additionally, the District will be upgrading the existing wastewater treatment plant and raw sewage lift station as a component of the overall project.

The project will provide multiple benefits including the following:

- Creation and restoration of wetlands habitat
- Creation of new riparian zones
- Improved water quality in Silver Bow Creek
- Nitrogen and phosphorus reduction
- Reduction of toxic ammonia compounds
- Recreational access to streamside habitat
- Recreational opportunities including hiking and bird watching
- Educational and interpretive opportunities regarding wastewater treatment through a "natural" reclamation system
- Cost reduction in Streamside Tailings Removal Project
- Treatment of local stormwater runoff
- Creation of new jobs through provision of community infrastructure

The project is directly consistent with the Streamside Tailings Operable Unit Record of Decision (Page 113) which, in the Decision Summary, identifies the use of wetlands to provide treatment for wastewater and reduction of storm water. Furthermore the ROD Summary identifies community improvement actions which develop the Silver Bow Creek recreational corridor land uses, an action also addressed by the proposed project.

5

Applicant Name: Westside Ditch Company

Project Title: Westside Ditch Planning Grant

Project Description and Benefits:

This project would fund initial research on water use/loss throughout the Westside Ditch. Information gathered from this project would be used to determine the feasibility of installing a pipeline aimed at onserving irrigation water current being drawn from the Clark Fork River (CFR). Corporation members believe that ditch loss could be as high as 40% of the total water taken from the CFR and would like to scientifically determine loss rates, current water use of all individuals along the ditch, and monitor the total amount now taken from the CFR. If ditch losses were proven to be large, the company could then pursue funding for the installation of a pipeline that would conserve water, which in turn could be returned to the CFR.

Applicant Name: Anaconda-Deer Lodge County

Project Title: Opportunity Groundwater Injury Assessment and Development of Feasible Water Resource Replacement Alternatives

Project Description and Benefits:

The goal of this proposed development project is two-fold. First, Anaconda-Deer Lodge County, through its technical consultant(s), will develop a strategy to assess the injury to the Opportunity-area ground water resources. The area's ground water injury will be assessed by utilizing data available from existing engineering studies; from the *Anaconda Ground Water Injury Assessment Report* (January 1995), and from proposed well monitoring analyses. Since analytical data from nearby monitoring wells indicates elevated levels of mining-related contaminants, some level of effect is likely present in the shallow Opportunity aquifer. Continued use of the aquifer will most likely cause migration of contaminants toward the community's residential well system.

A thorough review of area ground water investigations indicates that residential wells in Opportunity have not been sampled during the Remedial Investigation process. Therefore, Anaconda-Deer Lodge County is proposing to sample a significant number of residential wells to identify potential health issues associated with mining-related contamination, or nutrients associated with wastewater discharge. Actual verification of the quality and quantity of water available in the aquifers beneath Opportunity may be the most important phase of this project.

Concurrently with the sampling, a ground water flow model of the Opportunity area, shown on Figure 1 (attached), will be constructed to simulate ground water flow conditions. This model will be an invaluable tool in future water resource decision making.

Secondly, based upon the results of the well sampling, Anaconda-Deer Lodge County proposes to identify the location of, and to drill an exploration/test well to identify alternate aquifers for water supply, production capabilities, and water quality. A predictive contaminant transport model will be completed to determine the expected life and effect on any identified replacement source. This will help identify potential sources to provide replacement water supply within the area. These efforts will also include the evaluation of cost efficiencies associated with proposed alternatives. The alternatives will be presented to the public to help area residents identify and evaluate restoration needs, options and actions.

Anaconda-Deer Lodge County's long-term goal is to make available to affected county residents an abundant, quality water supply that meets State and Federal standards for residential use from a long-term, sustainable source.

QUARTERLY EXPENDITURE UPDATE

By: Kathleen Coleman

Each quarter the Natural Resource Damage Program reports Restoration Fund expenses. From January 1998 through March 2001, the Restoration Fund expenses totaled $5,058,181.20. This includes $4,412,847 paid out for NRD project expenditures. This amount is a portion of the $6,935,208 for projects approved by Governor Racicot in December 2000. The figures below also include $511,878 for Program expenses; $42,552 expended on Advisory Council costs and $90,653 spent by Fish, Wildlife and Parks for wetland/riparian enhancements. Included in the $90,653 expended by FWP is a $40,000 transfer from NRD which shows as an expense. However, only $7,305.00 of the $40,000 has actually been spent to date.

TOTAL UCFRB RESTORATION FUND EXPENSES
1/1/98 THROUGH 03/31/01

ENTITY	1/1/98 to 6/1/00	FY01	Total
MFWP wetland/riparian	$49,653.00	$41,000.00	$90,653.00
MFWP bull trout restoration	$0.00	$0.00	$0.00
Advisory Council	$38,349.14	$4,203.12	$42,552.26
NRDP Restoration	$315,459.27	$196,419.37	$511,878.64
Silver Bow Creek Land Transfer		$249.50	$249.50
Subtotal	**$403,461.41**	**$241,871.99**	**$645,333.40**
NRD Grants	$0.00	$4,412,847.80	$4,412,847.80
Total	**$403,461.41**	**$4,654,719.79**	**$5,058,181.20**

(Conservation Easements . . . Continued from page 3)

They both also commented that "one size does not fit all." Barbara believes restoration of the Clark Fork River valley goes hand-in-hand with easements that help ranches and farms stay ranches and farms, summarizing: "Stabilize the stream, stabilize the ranch." Regarding using UCFRB Restoration funds on easements, David responded, "Although I could see where easements could work, I'm not sure they are the best use of these funds. I guess it would depend on 'Compared to what?'" He suggested looking at what provides the most "bang for the buck."

A lively audience comment and question period followed the panel discussion, which about 70 people attended. Council member Gail Jones characterized the panel discussion as "a successful outreach effort with excellent attendance and participation by the audience." "The sharing of pros and cons of easements was enlightening and everybody who spoke had something meaningful to say."

Council member Darlene Koontz agreed with Jones and added, "I was impressed with the diversity of the panel and their presentations. What was extremely informative was the feedback from the audience and the private landowners on what conservation easements mean to them and how easements might fit into the restoration process."

Videotapes of both the panel discussion and question and answer session and copies of the speech outlines are available upon request from Kathy Coleman of NRDP at 444-0205. As a follow-up to the panel discussion, NRDP is working with the Advisory Council's Communication Subcommittee to draft an issue paper on conservations easements that highlights the replacement/restoration aspects of easements and the pros and cons covered in the panel discussion and includes the speech transcripts.

(Watching the River Flow
Continued from page 2)

The presentations have prompted praise, future suggestions, and criticism from students and teachers. One child in a small town along the river said, "Hey, my town is on the map, but there is no information about it!" This led to the positive suggestion that the Communication Subcommittee could work with children and teachers in towns that are not currently represented, and develop links on the map with information about their site. Several teachers have also suggested that the Communication Subcommittee host a seminar where they could learn more about the Clark Fork's history, pollution, remediation and restoration.

The multi-media education CD is intended to be a stand-alone presentation for teachers and students. As a field test, the recent presentations were facilitated by Communication Subcommittee members, NRD Program staff, and the faculty and students at Montana Tech who developed the presentation. Teachers who wish to use the CD in their classroom may obtain a free copy on request from Kathy Coleman at the NRD Program in Helena, ph. 406-444-0229.

New Members Join Advisory Council

By: Kathleen Coleman

Governor Martz has appointed three new members to the Upper Clark Fork Basin Remediation and Restoration Education Advisory Council. The new members are Jan Sensibaugh, Director of DEQ, Jeff Hagener, Director of Fish, Wildlife and Parks andJudy Jacobsen, Chief Executive of Butte Silver Bow.

Governor Racicot appointed this Council in 1998 to "facilitate public dialogue, promote understanding, and advise the Governor regarding site remediation and Upper Clark Fork River Basin restoration proposals."

Ms. Senisbaugh replaces Mark Simonich, former Director of DEQ. Mr. Hagener replaces the former Director of Fish, Wildlife and Parks Pat Graham. Judy Jacobsen takes over for former Butte Silver Bow Chief Executive Jack Lynch as one of the Council's two local government representatives.

Ms. Sensibaugh and Mr. Hagener also will serve on the Trustee Restoration Council that makes final recommendations to the Governor on which projects should be funded with natural resource damage monies.

(Silver Bow Creek Restoration . . .
Continued from page 1)

The Bighorn restoration project has added 2,200 tons of organic matter to the 22 acres of the Reach A floodplain. This organic matter will significantly enhance vegetation productivity in the floodplain. In addition, the Bighorn project enhances restoration by planting an additional 7,500 willows and 7,000 wetland plants in small patches throughout Reach A.

Greenway restoration efforts include planting an additional 5,000 willows and 600 shrubs in Reach A. This project also calls for planting 100 ten-foot cottonwoods, 300 five-foot aspen and 200 two-foot Lodge pole pines. Over time, the remedial and restoration plantings of these trees, shrubs and wetland plants will spread over the floodplain and improve the recovery time for Reach A.

Newly planted tree near Silver Bow Creek

SCHEDULE FOR 2001 UPPER CLARK FORK RIVER BASIN RESTORATION GRANTS

The following is a schedule as to when decisions will be made on applications submitted for 2001 Restoration Grants.

Application Deadline & Submittal:

- March 16, 2001 for Restoration and Monitoring and Research Grants
- Project Development Grants: Open Cycle

Funding Selection Process:

- Screening for Minimum Qualifications – spring 2001
- Project Evaluation and Ranking – summer 2001
- Pre-Draft Restoration Work Plan – summer 2001
- Draft Restoration Work Plan – public comment - fall 2001
- Final Proposed Restoration Work Plan to Governor - December 2001
- Grant Agreement Negotiation – winter 2002
- Funds Available on Reimbursement Basis – spring 2002

Next Cycle: In this second year of the Restoration Grant Cycle, we are relying on the framework established last year in the State's February 2000 *Restoration Plan Procedures and Criteria*, minus some limitations that were specific to the Pilot Year 2000 grant cycle. We will be working with the UCFRB Remediation and Restoration Education Advisory Council and other entities on improvements to the Restoration Grants process that may result in changes to this framework to be considered for public comment in late 2001.

See Special Insert for a summary of the 2001 Grant Proposal Abstracts

YOUR INPUT IN *RIVER WATCH* IS DESIRED

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *RiverWatch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *RiverWatch* article or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0229 or email kcoleman@state.mt.us

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Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

RiverWatch

October 2001 *Volume 2 Number 3*

Know your Advisory Council members...

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Anaconda

Sally Johnson
Vice Chair
Missoula

Mary Seccombe
Butte

Chris Marchion
Anaconda

Kathleen Hadley
Deer Lodge

Bruce Hall
Milltown

Gail Jones
Deer Lodge

Judy Jacobson
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Pat Munday
Walkerville

Matt Clifford
Missoula

Jan Sensibaugh
Director
MT Dept. of Environmental Quality

Jeff Hagenar
Director
MT Dept. of Fish, Wildlife and Parks

Carol Fox
Restoration Program Chief
NRDP/ MT Dept. of Justice

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Confederated Salish & Kootenai Tribes

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STATE RELEASES DRAFT 2001 RESTORATION WORK PLAN

By: Kathleen Coleman

The State of Montana's Natural Resource Damage Program (NRDP) released the *Draft 2001 Upper Clark Fork River Basin Restoration Work Plan* the first week of October for a 30-day public comment period. The Trustee Restoration Council has recommended six projects for a total fund request of $5.3 million. If you are interested in obtaining a copy of this document, it is available at local libraries, on the Department of Justice website at www.doj.state.mt.us or by contacting Kathy Coleman at 444-0229 or kcoleman@state.mt.us.

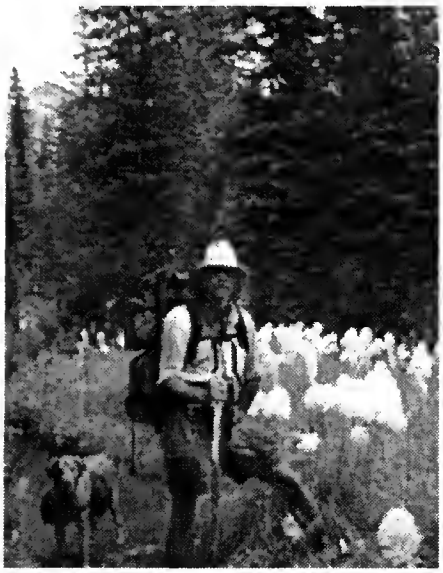
Individuals will be able to submit written comments to the NRDP until November 5, 2001. Comments must be postmarked by that date. There will also be two public meetings held at the **Butte Copper King Inn, 4655 Harrison Ave., on Monday, October 22, 2001 at 7:00 p.m. and the Deer Lodge Central Park Center Music Room, 444 Montana on Wednesday, October 24, 2001 at 7:00 p.m.**

NRDP staff will provide an overview of the process and a short summary of each of the recommended projects. There will also be an opportunity at this meeting for individuals to provide formal comments to the State.

The public may provide oral comments during these hearings or submit written comments on this document to the NRDP through November 5, 2001. Based on public comment received during the comment period and input from various entities throughout the funding selection process, the Trustee Restoration Council will make recommendations to the Governor. A final funding decision by the Governor is expected in late December 2001.

Attorney General Mike McGrath and Members of Legislative Oversight Committee observe work being done along Silver Bow Creek.

BIOGRAPHICAL SKETCH OF PAT MUNDAY, MEMBER OF THE UPPER CLARK FORK RIVER BASIN REMEDIATION AND RESTORATION EDUCATION ADVISORY COUNCIL



Pat Munday chairs the Advisory Council's Education & Communication subcommittee. He is a charter member of the Advisory Council, and has been active for the past ten years in Superfund-related issues in the Upper Clark Fork River Basin. He lives in Walkerville with his wife Jan and twelve year old daughter, Emily. He wants to leave future generations a sustainable Clark Fork watershed that looks more like Montana's other great rivers and less like a monument to shortsighted environmental abuse.

For the past eleven years, Pat has taught history and philosophy with the Technical Communication Department at Montana Tech in Butte. He has a B.S. in Materials Engineering from Drexel University, a M.S. in Science, Technology and Values from Rensselaer Polytechnic Institute, and a Ph.D. in the History & Philosophy of Science & Technology from Cornell University. Prior to beginning an academic career, he supervised a laboratory at an oil refinery.

Pat grew up on the Allegheny plateau in Pennsylvania, roaming its hardwood forests, oil fields, and freestone streams. This close association with nature taught him to appreciate wild creatures and natural resources, and to respect those who earn a living from the land. He is interested in the way people shape their environment to create a unique place, and recently published a book on this theme — *Montana's Last Best River: The Big Hole and its People* (The Lyons

FISCAL YEAR END RESTORATION FUND UPDATE

By: Kathleen Coleman

Each quarter the NRDP reports Restoration Fund expenses and revenues. A breakdown of the expenditures is outlined in the table below.

From January 1998 through June 30, 2001, Restoration Fund expenses have totaled $5,287,109.04. This includes $4,510,783 for Pilot Year Restoration grant projects. This amount is approximately 65% of the $6,935,208 for projects approved by Governor Racicot in December 2000. The remainder of this grant money will be spent over the next several years as the projects progress. The figures below also include $621,827 for Program expenses; $63,595 for Advisory Council expenses and $90,653 for Fish, Wildlife and Parks. Fish, Wildlife and Parks has been allocated $3.2 million by the settlement Consent Decree for wetland/riparian enhancements.

Between January 1998 and July 2001, interest revenues to the Restoration Fund have totaled $17,409,899. The current policy regarding expenditure from the Restoration Fund is that only the interest earned on the principle will be expended, unless the Trustee (the Governor) finds that it is appropriate to invade the principle to fund significant or time critical projects.

TOTAL UCFRB RESTORATION FUND EXPENSES: 1/1/98 through 6/30/01

Entity	1/1/98 to 7/1/00	FY01	Total
MFWP wetland/riparian/admin	$49,653.00	$41,000.00	$90,653.00
MFWP bull trout restoration	$0.00	$0.00	$0.00
Advisory Council	$38,349.14	$25,246.07	$63,595.21
NRDP Restoration	$315,459.27	$306,368.63	$621,827.90
Silver Bow Creek Land Transfer		$249.50	$249.50
Subtotal	$403,461.41	$372,864.20	$776,325.61
NRD Grants	$0.00	$4,510,783.43	$4,510,783.43
Total	$403,461.41	$4,883,647.63	$5,287,109.04

Z4 CONSERVATION EASEMENT

By: Jim Berkey, Stewardship and Land Protection Coordinator, Five Valleys Land Trust

The Five Valleys Land Trust (FVLT) acquired a conservation easement on the 2100-acre Z4 Ranch along the East and West Forks of Rock Creek west of Philipsburg in September 2000. The easement protects more than 1.25 miles of East Fork stream frontage, more than 230 acres of scattered depressional wetlands in the Potato Lakes area, and more than 1500 acres of native upland range that serves as fall, winter, and spring habitat for herds of elk and mule deer.

We are happy to report that the FVLT and the State's NRDP have executed a contract agreement for the last piece of funding for this easement. T he forthcoming $10,000 payment from the Restoration Fund will complete the easement funding.

By the end of this year, this conservation easement will be "overlayed" with a perpetual Wetland Reserve Program easement held by the Department of Agriculture and administered by the Natural Resource Conservation Service (NRCS). The NRCS and fisheries biologists with the Montana Department of Fish, Wildlife and Parks are working on a restoration plan for this segment of the East Fork aimed at improving habitats for native trout and migratory songbirds. Historically, the creek has experienced livestock grazing, straightening (in conjunction with County road construction), and crop production within a few feet of its banks. The restoration will most likely include fencing the riparian zone, restoring natural channel sinuosity and habitat diversity, and shrub and tree plantings.

We are currently beginning discussions with the landowners on other possible restoration projects on the property, namely for the depressional wetlands. Since these isolated wetlands can serve as critical "refueling" and nesting sites for migrant waterfowl, we plan on bringing other funding partners in to assist in restoring and maintaining these habitats.

The FVLT continues to be very active throughout the Rock Creek Watershed "protecting and enhancing Rock Creek's Blue Ribbon trout waters, the health of its nationally acclaimed wildlife habitat, its unusual biodiversity, and the open space beauty of the drainage" by working with landowners and managers in long-term and meaningful conservation solutions.

River Watch is published by the State of Montana's Natural Resource Damage Program and is paid for out of the UCFRB Restoration Fund. The editorial content is determined by the UCFRB Remediation and Restoration Education Advisory Council. Individual articles are contributed by various people or entities representing different viewpoints, and the opinions expressed are those of the authors and do not necessarily reflect the opinions of the State of Montana, its agencies or employees.

Public Hearing Notice

The Department of Justice/ Natural Resource Damage Program will hold two Public Hearings to discuss its *Draft 2001 Upper Clark Fork River Basin Restoration Work Plan.* This document outlines the State's recommended projects for 2001 restoration grant funds obtained from the partial settlement of Montana v. ARCO. These meetings will provide an overview of the projects and the project evaluation process. There will also be an opportunity for individuals to provide formal comments to the State. The meetings will be held at:

- **Monday, October 22, 2001 at 7:00 p.m.**
  Butte Ramada Copper King Inn
  4655 Harrison Avenue

- **Wednesday, October 24, 2001 at 7:00 p.m.**
  Deer Lodge Central Park Center Music Room
  444 Montana

For additional information, please contact Kathy Coleman at 444-0229.

The next meeting of Upper Clark Fork Basin Remediation and Restoration Education Advisory Council is scheduled for:
November 14, 2001
1:00 P. M.
Specific location is yet to be determined
Missoula, MT 59801
If you would like receive a notice and agenda of the Advisory Council meetings, please contact: Kathy Coleman at 444-0229 or kcoleman@state.mt.us

FEATURED ARTICLE:

Previous newsletters have focused on natural resource injuries present in the Clark Fork River Basin, which were subject of the Montana v. ARCO lawsuit. This issue will discuss the Milltown Dam and Clark Fork River Operable Unit.

Milltown Dam and Clark Fork River Remedial Update

By: Gregory Mullen

Milltown Reservoir Sediments Site: The Milltown Dam, which was built in 1907, has some 6.6 million cubic yards of sediment in Milltown Reservoir behind the dam. These sediments, which contain mine wastes from upstream mining activities, have elevated concentrations of metals and arsenic. These hazardous substances have contaminated the groundwater under Milltown. As a result, the reservoir was listed as a federal Superfund Site in 1983.

In fall of 2001, EPA will issue a Combined Feasibility Study (FS) that evaluates cleanup options to be considered by EPA and the State. Based on the previous draft and focused feasibility study, these alternatives may range from simple dam modifications to dam removal and full sediment removal.

Early next year, EPA plans to release a proposed plan identifying the alternative that best meets Superfund evaluation criteria. These criteria are:

1. Overall Protection of Human Health and the Environment
2. Compliance with Applicable or Relevant and Appropriate Requirements
3. Long-Term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility, and Volume
5. Short-Term Effectiveness
6. Implementability
7. Capital and Operating and Maintenance Cost
8. State Acceptance
9. Community Acceptance

Public comment on the proposed plan will assist in evaluating State and community acceptance criteria. After the public comment period, a Record of Decision should be issued sometime in late summer 2002.

Clark Fork River Operable Unit: The Clark Fork River floodplain has millions of cubic yards of contaminated sediments that have accumulated from upstream mining activities and occur at various depths throughout a 3500-acre area. The river has reduced fish populations because these contaminated sediments which contain arsenic, copper, zinc, cadmium, lead and other hazardous substances toxic to aquatic life, are eroded into the River. The area of the Clark Fork River from Warm Springs Ponds to Milltown Dam, some 125 miles, was listed as a Superfund site in 1983.

The draft feasibility study issued in Dec. 2000 evaluated alternatives that involved varying levels of in-place reclamation of exposed tailings and removal of contaminated materials. Capital costs ranged from three million dollars for in-place reclamation of 167 acres of exposed tailings to several hundred million dollars for full removal of all contaminated soils. Early next year, EPA plans to release a proposed plan for public comment. The final Record of Decision should be issued in late summer 2002.

YOUR INPUT IN *RIVER WATCH* IS DESIRED

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *RiverWatch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *RiverWatch* article or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0229 or email kcoleman@state.mt.us

UPDATE ON PILOT YEAR RESTORATION PROJECTS

By: Carol Fox

In December 2000, Govenor Racicot approved approximately $7 million dollars for eight restoration projects that involve stream restoration, revegetation, easements and land acquisitions, creation of a database framework and development of a recreational trail corridor. Some of these projects have been completed while work continues on others. A summary of the projects and progress as of fiscal year end (June 30, 2001) is included below. A table is also included indicating the amount of money approved for each project and the amount of money spent as of June 30, 2001.

Bighorn Environmental Services – Enhanced Revegetation of Silver Bow Creek Reach A , $110,800

Project Summary: This project will restore wildlife habitat along Reach A (the first mile) of Silver Bow Creek in the next year. Major components include planting of woody and wetland plants in the floodplain and the addition of organic matter to backfill materials. Restoration revegetation activities will be coordinated with remedy revegetation activities and the Greenway revegetation activities in 2001, with routine monitoring to occur through 2003.

Progress as of 6/30/01: All planned revegetation and organic matter placement efforts have been completed on Reach A. Plantings include 8,000 willows, 7,600 wetland plugs and 2,200 cubic yards of organic matter. Coordination with remedy continues.

Deer Lodge Valley Conservation District/Bridger Plant Materials – Development of Acid/Heavy Metal Tolerant Cultivars, $141,439

Project Summary: This 4-year project is a joint effort between the Deer Lodge Valley Conservation District and the Natural Resource Conservation Service Bridger Plant Materials Center. This project will collect, test, select, grow and ultimately release indigenous native plants that demonstrate superior adaptation to the Anaconda Uplands area. Foundation seed for the releases will be produced and maintained by the Plant Center for distribution to commercial seed growers.

Progress as of 6/30/01: The overall project is 14% complete. Objective 1- identification of tolerate species, is 78% complete. Objective 2- testing of woody plant materials, is 10% complete. Objective 3- the location and collection of seed/cuttings thriving in mine-affected soils, is 35% complete. Objective 4- the establishment and expansion of seed increase blocks of grasses, forbs and shrubs at Bridger Plant Materials, is 65% complete. Objective 5- to make official releases at the Selected and Source-Identified class levels as well as publicize and promote product, is 5% complete. Objective 6- the determination of optimal species, is 15% complete. Objective 7- to share new technologies, is 10% complete.

Greenway Service District– Silver Bow Creek Greenway, $1,772,758

Project Summary: This project will develop a recreational trail corridor and restore aquatic and riparian resources along the first 3 miles (Reaches A through C) of Silver Bow Creek west of Butte. The Greenway activities will be coordinated with remedial actions occurring on these reaches in 2001 and 2002. The planned Greenway effort involves similar activities along the entire 22-mile Silver Bow Creek stream corridor between Butte and Warms Springs Ponds over the next 10-12 years at a total estimated cost of approximately $18 million.

Progress as of 6/30/01: Reach A plantings have been completed. These plantings include 100 large trees, 500 small trees, 450 shrubs and 5,000 willows. The agreement to cover DEQ contractor costs has been executed but the agreement between NRDP and Greenway Service District has not been finalized.

Montana Fish, Wildlife and Parks – Lost Creek Watershed Project, $518,382

Project Summary: This 4-year project involves the rehabilitation of approximately 27 miles of Lost Creek, a significant tributary of the Upper Clark Fork River. The project seeks to improve water quality and fish and wildlife habitat through activities such as riparian fencing and grazing management, development of off-stream watering facilities, stabilization or relocation of certain stream segments, streambank revegetation, and creation of fish passage structures. Total project costs are $1.7 million.

Progress as of 6/30/01: No restoration fund work started. No contract is in place yet, as other funding sources are being used for the initial project activities.

(Continued on Page 7)

(Continued from page 6)

Montana Fish, Wildlife and Park– Manley Ranch Conservation Easement, $608,048

Project Summary: The Manley Ranch encompasses 16,000 acres overlapping the Clark Fork-Blackfoot divide in Granite and Powell Counties, about 4 miles northeast of Drummond. This project will acquire a Phase I conservation easement in 2001 applicable to 3,416 acres in the headwaters of Morris Creek, a tributary of the Clark Fork River. This easement will impose restrictions on certain human activities including timber harvest, ranching, and development in order to preserve fish and wildlife habitat, open space, and scenic views. It provides for guaranteed public access of 350 hunter-days.

Progress as of 6/30/01: Transaction completed on March 21, 2001.

Rock Creek Trust–Z-4 Ranch Conservation Easement, $10,000

Project Summary: This project is a 2,100-acre conservation easement on the Z-4 Ranch in the upper Rock Creek drainage. The easement applies to property that includes portions of the East and Middle Forks of Rock Creek. Stream rehabilitation work will be conducted on the East Fork following finalization of the easement. The easement will impose restrictions on certain human activities including timber harvest, ranching, and development in order to protect open space and scenic beauty, fish and wildlife habitat, water quality, and to renaturalize the streams and their riparian zones. Restoration funds would provide $10,000 of the $133,900 easement cost. Stream rehabilitation costs, which would not use Restoration funds, are estimated at $125,193.

Progress as of 6/30/01: Waiting for contract signatures.

University of Montana–Technical Assistance for Watershed Restoration Analysis and Planning, $9,550

Project Summary: This project involves designing an informational database for UCFRB restoration planners in 2001. The database design will expand on the Montana Natural Resource Information System's statewide watershed information system. The project involves outreach to local watershed groups and conservation districts to determine their database needs and provide training. The end products will be the conversion of some data sets to a useable form and a recommendations report on full database development. This report will identify UCFRB restoration planning needs, available data and data gaps, and the additional tasks and funding needed to develop an informational database.

Progress as of 6/30/01: Completed a preliminary assessment of information needs based on a preliminary survey of potential database users. Evaluated information and resource gaps.

Rocky Mountain Elk Foundation–Watershed Land Acquisition, $3,764,231

Project Summary: The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres in the UCFRB from Y.T. Timber via a phased acquisition over 4 years. The property is located between Anaconda and Georgetown Lake and includes the bulk of the Warm Springs Creek watershed not already in public ownership. RMEF seeks a total of $5.8 million in Restoration funds to acquire 8,968 acres for state ownership and management by the Montana Fish, Wildlife and Parks. These lands consist of two parcels that provide prime wildlife habitat and numerous recreational opportunities – the Garrity Mountain parcel (6,704 acres) and the Clear Creek parcel (2,264 acres). RMEF is also seeking $16,675,000 from the federal Land and Water Conservation Fund for approximately 23,500 acres for federal ownership and management by the U.S. Forest Service (USFS). The option agreement allows Y. T. Timber to conduct timber harvest activities over 7 years subject to the terms of a timber management policy. In the pilot year, the Governor approved the purchase of 5,790 total acres for $3,764,231. RMEF is seeking $2.1 million in the 2001 Restoration Grant cycle to acquire the remaining 3,178 acres.

Progress as of 6/30/01: Transaction covering 5,790 total acres completed on February 21, 2001.

The following table shows the amount approved for each project in December 2000 by Governor Racicot, the amount spent on each project as of June 30, 2001, and the amount remaining to be spent.

Project	Amount Approved	Amount Spent to Date	Amount Remaining (As of 6/30/01)
Bighorn	$110,800.00	$74,565.35	$36,234.65
Bridger Plant Materials	$141,439.00	$13,529.29	$127,909.81
Greenway	$1,772,758.00	$50,675.63	$1,722,082.37
Lost Creek	$518,382.00	$0.00	$518,382.00
Manley Ranch	$608,048.00	$608,048.00	**Project Complete**
Z-4	$10,000.00	$0.00	$10,000.00
University of Montana	$9,550.00	$0.00	$9,550.00
Watershed Land Acquisition	$3,764,231.00	$3,763,925.16	**Project Complete**
Total	**$6,935,208.00**	**$4,510,743,43**	**$2,424,158.73**

For further information, contact Kathy Coleman, Natural Resource Damage Program, P.O. Box 201425, Helena, MT 59620, (406) 444-0229 or kcoleman@state.mt.us.

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RIVERWATCH

Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

RiverWatch

September 2002 *Volume 3 Number 1*

Know your Advisory Council members...

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Anaconda

Sally Johnson
Vice Chair
Missoula

Haley Beaudry
Butte

Matt Clifford
Missoula

Larry Curran
Butte

Jerry Harrington
Butte

John Hollenback
Gold Creek

Judy Jacobson
Butte

Gene Vuckovich
Anaconda

Jules Waber
Deer Lodge

Jan Sensibaugh
Director
MT Dept. of Environmental Quality

Jeff Hagener
Director
MT Dept. of Fish, Wildlife and Parks

Carol Fox
Restoration Program Chief
NRDP/ MT Dept. of Justice

Carole Lankford
Tribal Representative
Confederated Salish & Kootenai Tribes

Darlene Koontz
U.S. Dept of the Interior

To find out more, call or write to:
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FOUR PROJECTS GIVEN PRELIMINARY APPROVAL

By Kathleen Coleman, NRDP

The Trustee Restoration Council gave preliminary approval to four projects at its August 23rd meeting. Natural Resource Damage Program staff and the Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council had recommended the projects for funding.

The four projects and recommended funding amounts are:

- Silver Bow Creek Greenway - $4,955,273
  ($2,449,940 in 2003 and $2,505,333 in 2004)
- Butte Waterline - $1,168,842
- Anaconda Waterline - $749,942
- Stuart Mill Bay Acquisition - $2,000,000

For detailed information on these projects, see the special insert.

Based on the Trustee Restoration Council's draft recommendations, the Natural Resource Damage Program has released its *Draft 2002 Upper Clark Fork River Basin Restoration Work Plan* for public comment. Comments will be accepted through October 11, 2002. Copies of the plan can be found at local libraries or on the NRDP website at www.doj.state.mt.us/ls/damlit.htm. Written comments should be postmarked no later than October 11, 2002, and sent to:

State of Montana, NRDP
PO Box 201425
Helena, MT 59620-1425 or
Faxed to (406) 444-0236; or emailed to nrdp@state.mt.us

TWO PROJECT DEVELOPMENT GRANTS GIVEN FINAL APPROVAL

By Kathleen Coleman, NRDP

At its August meeting, the Trustee Council gave final approval to two projects – the German Gulch and Lower Little Blackfoot projects. As Project Development Grants (PDG) for $25,000 or less, these projects do not have to be approved by the Governor, unlike Restoration Grants over $25,000.

Lower Little Blackfoot River PDG:

The Deer Lodge Valley Conservation District will collect data and develop design plans for stream channel reconstruction, streambank revegetation and grazing management strategies to restore a 2.5-mile reach of the Little Blackfoot River near Garrison. Aquatic habitat in this area is severely degraded. When implemented, these design plans will improve water quality, aquatic and riparian habitat, and trout populations in the Little Blackfoot River. The total PDG budget is estimated at $43,500, with approved Restoration funds of $25,000.

German Gulch Restoration PDG:

Using $24,550 in Restoration funds, the George Grant Chapter of Trout Unlimited will develop a restoration proposal for the lower five miles of the German Gulch Watershed. The project will develop design plans for channel reconstruction, bank stabilization, riparian and upland habitat improvements, re-vegetation, non-motorized public access, and aquatic enhancements to benefit the fishery in German Gulch and Silver Bow Creek. Trout Unlimited also will assess the feasibility of purchasing or placing conservation easements on private lands within and around German Gulch. Total PDG costs are $43,846.

New Faces for Advisory Council

By Carol Fox, NRDP

The Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council had many new faces beginning April 2002.

The Advisory Council was first established in 1998 by executive order of former Governor Racicot to "promote public understanding of the State's efforts to remediate and restore sites in the Upper Clark Fork River Basin that have been injured by hazardous substances for which ARCO is liable." Members were appointed to two-year terms. All of the original members who wished to continue were re-appointed to a second term in 2000.

This April, Governor Martz chose to re-appoint some current members and add some new faces to the Council:

- Chairman Jim Flynn of Anaconda, Sally Johnson and Matt Clifford of Missoula, and Judy Jacobson of Butte were re-appointed.
- Gene Vuckovich of Anaconda, Jules Waber of Deer Lodge, John Hollenback of Deer Lodge, and Larry Curran, Jerry Harrington and Haley Beaudry of Butte were the new appointees.
- Phil Tourangeau, Darlene Koontz, Sandi Olsen, Glenn Phillips, and Carol Fox continue to represent governmental entities on the council.

"I decided to consider working with the Advisory Council because I felt I might have something to offer from a technical perspective and because I care deeply about using the financial resources at our disposal as effectively as humanly possible for the long-term benefit of the people living with the impacts of a less enlightened era," Jerry Harrington reflected on his appointment. "... I think that the concept of this Advisory Council is to be sure that deliberations and decisions are carried out under the light of broad-based public involvement. The more information the better, and my guiding sense in this role is to do my work such that when I'm 95 and when my grandkids are 95, we are able to say we did the best amount of good with what we had for those damaged resources," he said.

It has been a busy time for Council members as the beginning of the term coincided with the start of the 2002 Restoration Grant Cycle. In April, Council members heard presentations from 2002 applicants and in May and June there were orientation sessions, along with visits to the 2002 project sites and some of the injured areas of the UCFRB. In July, the NRDP presented its draft funding recommendations to the council and the council voted on those in August. (See related story)

"When I was first appointed I thought I had a pretty good handle on the Natural Resource Damage Program and the complexities associated with the Advisory Council," new member Larry Curran said. "After a few meetings I realized I had just scratched the surface. It is important that we build on the accomplishments of the previous council and continue the restoration efforts in the upper basin," Curran said. "The decisions we make today regarding the cleanup effort will certainly impact future generations."

The NRDP welcomes these new Council members and the new ideas, interests, and enthusiasm they bring to restoration decision-making. NRDP also extends its thanks to previous Council members Matt Clifford, Jim Flynn, Kathy Hadley, Bruce Hall, Judy Jacobson, Sally Johnson, Gail Jones, Pat Munday, Chris Marchion, and Mary Seccombe for their dedicated service. They contributed greatly to "charting the waters" of the restoration process and program. They brought about improvements to the process and set the stage for future improvements. Even though they brought differing views to the table, they cooperatively and diplomatically accomplished their mission in an exemplary fashion. Thank you.

Profile for Sally Johnson
A Native Montanan

A native Montanan, Sally Johnson serves as the citizen-at-large member and vice-chair of the Advisory Council. She lives in Missoula with her husband, Ross Miller and their nine-year-old daughter Florence. They spend their free time enjoying Montana's wild places. Sally sees the restoration of the Upper Clark Fork River Basin as a long-term project, the success of which will be fully seen by her daughter and future generations of Montanans.

Sally is an attorney specializing in land transactions and conservation easeme She works for the Rocky Mountain Elk Foundation. Sally is serving her 5th year on the council.

Article on the Upper Clark Fork Watershed Restoration Information System

By Vicki Watson & Chris Brick, UM

"If only we had the right data, we could make this decision."
"We're going to make this decision based on the best available data."

How often have you heard such statements? How about this one:

"Data, data everywhere, and not a thought to think."

We've all heard about the information explosion; there is so much data available on some subjects that we suffer 'paralysis by analysis.' We get buried under lots of raw (unanalyzed) data, and/or we're always waiting for more data before making a decision.

But let's distinguish between raw data (measurements or observations) and information. Information is generated when we analyze, synthesize, and interpret data to give it meaning, to relate it to our concerns. When it comes to natural resource decisions, we often have a lot of data, but not all that much information of the kind we need.

For example, there's a lot of data on various aspects of the Upper Clark Fork Watershed, thanks to numerous studies associated with Superfund and other efforts; but there are still many gaps in the information needed to guide decisions about restoration. With this in mind, we undertook the following project with funding from NRDP's restoration grants program:

- To summarize the kinds of information needed for watershed restoration planning;
- To summarize the data & information that is available for the upper Clark Fork;
- To identify gaps in data & information needed; and
- To propose a framework for an information development & delivery system that would make it easier to find and understand how to use available information and that would also help information developers identify the most critical information gaps.

We have summarized the results of this effort in a report and a web page at http://www.cs.umt.edu/GEOLOGY/nrdp/NRDPmain.htm. The website contains a link to a database to assist restoration project planners. The information is listed by subject area, key watershed databases and also lists information gaps.

Basically, we concluded that the Montana State Library's Natural Resource Information System (NRIS) was the best place to maintain such an information clearinghouse. Our web page serves as a model for organizing a clearinghouse on water and watershed information needed in restoration or in other natural resource planning.

NRDP will work with NRIS on how to develop and maintain such a system for the upper Clark Fork Watershed. We invite you to look at the model web page and read the report to see the kinds of information that can assist restoration decision making. Please keep in mind that an information clearinghouse is something that is never completed – since new information resources and needs are always developing. Your comments and suggestions can be sent to: Kathy Coleman at kcoleman@state.mt.us or 444-0229.

A Vision for the Future of Silver Bow Creek Watershed

***WANTED:* Interested, knowledgeable, concerned visionary members of the Silver Bow Creek Watershed Community!**

The Montana Natural Resource Damage Program needs your help developing a watershed restoration plan to address priority needs. Please come share your thoughts on current watershed conditions, your visions, values, and concerns and priorities for Silver Bow Creek, and work with others from your watershed community to conceive a positive future for a restored Silver Bow Creek. The meeting will be held on ***Tuesday, October 8, 2002 at 7:00 p.m. at the Ramada Copper King, 4655 Harrison Avenue in Butte.*** *For more information contact Kathy Coleman, by phone (406-444-0229) or by email (kcoleman@state.mt.us); Mary Ellen Wolfe by phone (406-587-6352) or by email (mwolfe@bigsky.net).*

River Watch is published by the State of Montana's Natural Resource Damage Program and is paid for out of the UCFRB Restoration Fund. The editorial content is determined by the UCFRB Remediation and Restoration Education Advisory Council. Individual articles are contributed by various people or entities representing different viewpoints, and the opinions expressed are those of the authors and do not necessarily reflect the opinions of the State of Montana, its agencies or employees.

Development of Silver Bow Creek Watershed Restoration Plan is Underway

By Carol Fox, NRDP

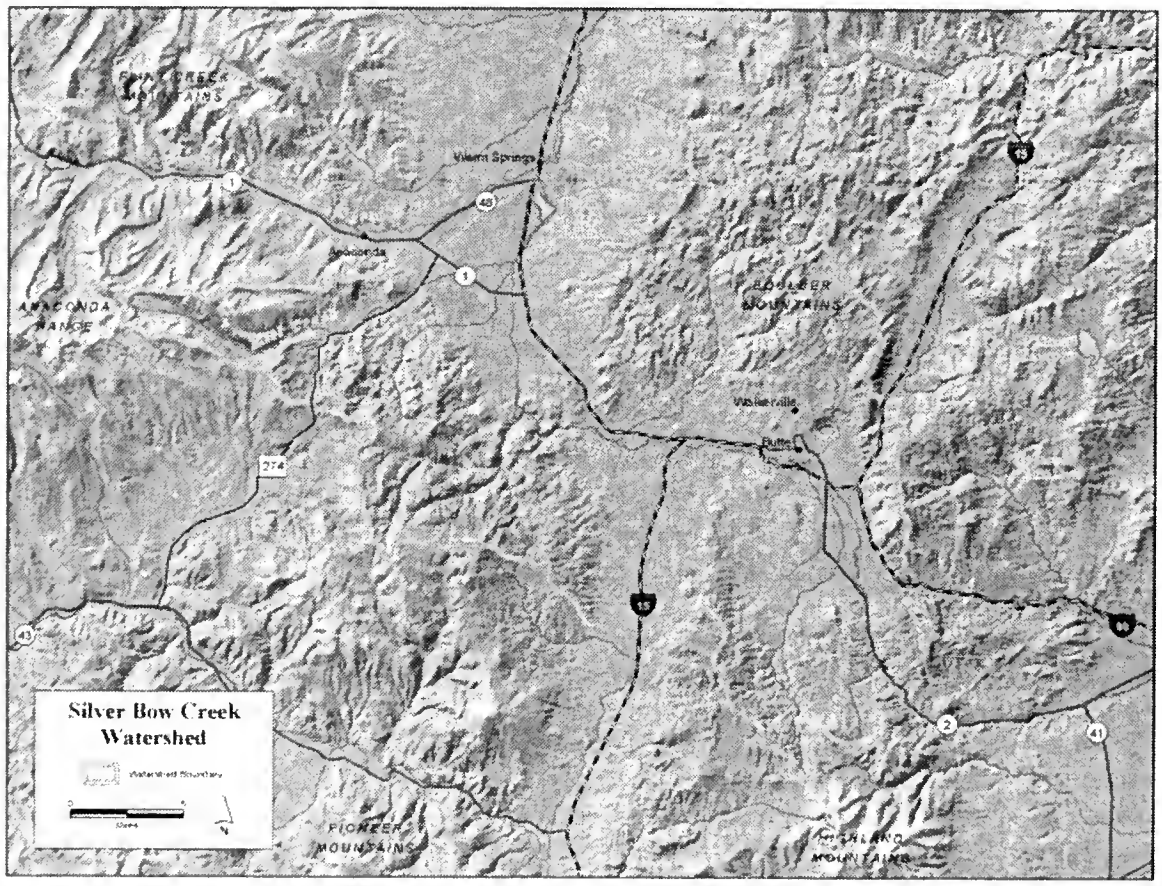
What would you like to see as the condition of the Silver Bow Creek resources in 15 years? In 30 years? The time is ripe to hear from folks who know and care about the natural resources of the Silver Bow Creek watershed.

Montana's Natural Resource Damage Program (NRDP), with help from consultants, initiated the Silver Bow Creek Watershed Restoration Plan Project in the spring of 2002. The project is meant to formulate a watershed restoration plan for Silver Bow Creek based on restoration goals, potential, priorities and costs.

With help from the public, the NRDP, and its consultants will use an extensive information and data collection process to develop the plan. We will also create a unique spatial model to help clarify and prioritize restoration opportunities and potential. The model and plan will examine the entire watershed and identify a series of restoration, rehabilitation, replacement, and acquisition opportunities to improve fish and wildlife habitat and populations and associated public recreational services in the watershed. The final plan and model will assist with future evaluation of NRDP grant proposals, help guide funding decisions and serve as a planning tool for restoring natural resources in the Silver Bow Creek watershed.

Releases of hazardous substances from ARCO and its predecessors' historic mining and smelting operations severely degraded the fish and wildlife habitat and populations of the Silver Bow Creek watershed and greatly reduced associated public recreational uses. Remediation efforts are under way and the time is right to take a broader "watershed-wide" approach to better understand desired future conditions, restoration opportunities and potential, and to establish restoration goals and priorities for Silver Bow Creek.

This project focuses on fish and wildlife resources and associated recreational resources of the Silver Bow Creek watershed from the west end of Butte at the confluence of Blacktail Creek to Warm Springs Ponds. Tributary sub watersheds also addressed in the project are Blacktail Creek, German Gulch, Sand Creek, Browns Gulch, Mill Creek and Willow Creek (see attached map). The project will not address Butte-area contamination problems that are the subject of pending litigation and Superfund cleanup decisions, including storm water runoff from upper Butte and the shallow groundwater contamination in lower Butte.



To date, our efforts have focused on gathering information from local citizens, resource users and interest groups (including public agencies) regarding their experiences, concerns, needs, and ideas for the restoration of the Silver Bow Creek watershed. During the summer of 2002, NRDP and its consultants met with about 50 people representing 20 entities to explain the planning effort and gain crucial input on the existing and potential conditions of environmental and recreational resources of the Silver Bow Creek watershed. We are continuing these focus group meetings in September. We will have a **public meeting in Butte on October 8th at the Ramada Copper King Inn** to describe the project to the general public, share information from the focus group meetings, and solicit additional public comment. An ad hoc subcommittee of representatives of these focus groups will assist in the review of the draft plan, which will later be submitted for public comment. Our goal is to complete the project in the spring of 2003. For more information on this project, check out our website www.doj.state.mt.us/ls/damlit.html or call Kathy Coleman at 444-0205.

~ SPECIAL INSERT ~
YEAR 2002 GRANT PROPOSAL ABSTRACTS

The following are project summaries of the applications submitted to the Natural Resource Damage Program for Year 2002 Restoration Grant funds.

Drinking Water Infrastructure Replacement Year 2 ("Butte Waterline") – Butte-Silver Bow City County Government

Butte-Silver Bow City County proposes to replace approximately 17,000 feet of inadequate water distribution lines in the City of Butte for a total cost of $1,712,059, with $1,168,842 requested in Restoration funds. This is the second year in which Butte-Silver Bow has requested funding for water line replacement. The amount requested is $3,047 more than last year's approved funding request.

Butte's bedrock aquifer is contaminated throughout a seven square mile area of the City and these distribution lines overlay that aquifer. This aquifer is so severely injured that natural recovery will not occur for thousands of years as concluded by the State's 1995 Restoration Determination Plan[1] and by EPA's 1994 Record of Decision.[2] Restoration of the bedrock aquifer is infeasible, thus the aquifer's drinking water and its storage capacity and transport services have been lost for thousands of years. This project constitutes replacement of lost services to thousands of property owners and other members of the public in Butte that could utilize the aquifer if it was not injured. By fixing leaking and corroded water lines, this proposal will enhance the water supply from an uncontaminated source.

Main Street & Bowman Field Water Distribution Upgrades ("Anaconda Waterline") – Anaconda-Deer Lodge City County Government

Anaconda-Deer Lodge County requests $749,942 in Restoration funds for two projects, Main Street waterline replacement ($680,212) and Bowman Field waterline installation ($69,730). The County is replacing a 104-year-old, leaking 10-inch waterline along Main Street. The water distribution system within the City of Anaconda loses approximately 1.75 million gallons of water per day through leaks, with an estimated 5% of the water loss occurring through the Main Street waterline. Repairing these leaks is an alternative that will provide the City of Anaconda with additional water resources instead of developing of a new source of water. Installation of a new waterline to the Bowman Field airport is part of the development plan for the airport. Because of the underlying groundwater contamination associated with the injured Anaconda Area Resources, drilling a water well is not as cost effective as installing an 8-inch waterline to the airport from the 16-inch Warm Springs Creek waterline.

The City of Anaconda and Bowman Field are located adjacent to or within the 40 square miles of groundwater contamination associated with the injured Anaconda Area

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[1] *Restoration Determination Plan Upper Clark Fork River Basin*, NRDP, October 1995.
[2] *Record of Decision, Butte Mine Flooding Operable Unit*, U.S. Environmental Protection Agency, September 1994.

Resources. Groundwater resources are somewhat limited because the upper portion of the alluvial groundwater aquifer east of Anaconda is contaminated with metals associated with past mining activities at levels above drinking water quality standards. The 1995 State of Montana Anaconda Groundwater Injury Assessment Report supports this claim of groundwater contamination east of Anaconda. Also, the 1998 Anaconda Regional Water, Waste, and Soils Operable Unit Record of Decision shows some 30 square miles of contaminated bedrock groundwater to the north and south of the City. Both the Main Street waterline upgrade and the Bowman Field waterline installation are considered replacement projects.

Silver Bow Creek Greenway ("Greenway") – Greenway Service District

The Greenway Service District is requesting $5,067,273 over two years ($2,449,940 in 2003 and $2,617,333 in 2004) to develop a recreational trail corridor and to restore aquatic and riparian resources along miles six and seven (Reaches F and G of Subarea Two) of Silver Bow Creek west of Butte. As in previous years, many of the Greenway activities will be coordinated with remedial actions. That coordination will occur to an even greater extent with this year's proposal, which involves activities that will almost all be conducted jointly with remedial actions. The major coordination components entail an estimated $2.7 million for removal of approximately 336,000 cubic yards of tailings/impacted soils and $1.6 million for enhanced aquatic and revegetation efforts.

In the last two years, the Greenway Service District was awarded $2.9 million in Restoration funds for development of the Greenway trail and restoration of aquatic and riparian resources and services along the first five miles (Reaches A-E of Subarea One) of Silver Bow Creek.

Stuart Mill Bay Acquisition ("Stuart Mill Bay") – The Conservation Fund

The Conservation Fund requests $2 million to acquire the 328 acre Stuart Mill Bay property located along the southeast portion of Georgetown Lake for public ownership, use and management. The purchase would acquire fish and wildlife habitat and public access for fishing, hunting, camping, and other recreational uses. The Stuart Mill Bay property has about two miles of lake frontage and includes 48 acres of wetlands, 90 acres of grasslands, and 190 acres of forestlands. The property has historically been open to public use and informally managed as a dispersed campground, day-use site and fishing access site for decades. The Conservation Fund negotiated a purchase agreement, effective until March 2003, with Mountain Lion LLC to obtain this acreage. Through this acquisition, the Conservation Fund seeks to retain the property's public recreational uses and natural resource and scenic values and prevent subdivision and development of the property.

FEATURED ARTICLE:

Previous newsletters have focused on natural resource injuries present in the Clark Fork River Basin, which were subject of the Montana v. ARCO lawsuit. This issue will discuss the Montana Pole Treating Plant Site in Butte.

Montana Pole and Treating Plant Superfund Site

By Gregory Mullen, NRDP

The Montana Pole and Treating Plant Superfund site is a former wood treating facility in southwestern Butte. Interstate I-15/90 divides the site into sections north and south of the highway. The plant, which operated from 1946 to 1984, used pentachlorophenol (PCP) and diesel fuel to preserve wood products. Spills of PCP treating fluids and on-site disposal practices contaminated the soils, groundwater and surface water in Silver Bow Creek. Groundwater contamination extends over approximately 44 acres and soil contamination initially affected approximately 240,000 cubic yards. DEQ and EPA are remediating the site with monies from a $35 million settlement reached in 1996.

The Montana Pole project has been divided into six phases:

Phase 1:
- built an addition to the water treatment plant,
- constructed two contaminated groundwater recovery trenches,
- removed 46,000 cubic yards of north-side contaminated soils, and
- constructed an above-ground, nine-acre biological land treatment unit (LTU).

Phase 2:
- removed the hazardous and non-hazardous debris remaining on site.

Phase 3:
- removed 132,000 cubic yards of south-side contaminated soils,
- off-loaded Phase 1-treated soils from the LTU,
- placed contaminated soil on the LTU, and
- installed the north and south groundwater *in situ* treatment systems.

Phase 4, now underway:
- involves removing soils from the LTU as they reach remedial standards set for the site. Some of these treated soils were placed over the south-side *in-situ* system in the area where the contaminated soils were initially excavated.

Phase 5:
- will address the contaminated soils beneath Interstate 15/90.

Phase 6:
- will remove and dispose of the soil treatment facilities on the south side of the site, and
- will re-vegetate all disturbed areas.

In 2001, the water treatment plant treated approximately 136 million gallons of contaminated groundwater, removing approximately 660 pounds of PCP. Last year, 5,000 gallons of oil recovered from the groundwater surface were disposed of at an off-site hazardous waste incinerator. Groundwater treatment is expected to continue for decades.

To date, approximately 100,000 cubic yards of soil have been successfully treated in the LTU. The LTU continues to operate, treating soils loaded during Phase 3. An additional 20,000 cubic yards of contaminated soils are undergoing treatment in storage piles on the site. As part of the site cleanup, DEQ is evaluating the feasibility of excavating and treating soils from beneath the interstate structures in lieu of the soil flushing called for in the Record of Decision. If this work goes forward, approximately 40,000 cubic yards of soil would be excavated and treated in association with the planned replacement of the interstate bridge structures by the Montana Department of Transportation.

Residents who live near the former plant have raised concerns about odor from the LTU. To address these concerns, DEQ has implemented odor control techniques that will slow the biological processes used to degrade site contaminants. Treatment of all the soils on the site is therefore expected to take longer than previously indicated. DEQ continues to monitor air quality in and around the site year round.

YOUR INPUT IN *RIVER WATCH* IS DESIRED

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *RiverWatch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *RiverWatch* article or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0229 or email kcoleman@state.mt.us

UPPER CLARK FORK RIVER BASIN RESTORATION PROJECTS STATUS REPORT

By Kathy Coleman, NRDP

In December 2000, former Governor Racicot approved approximately $7 million for eight restoration projects and in December 2001, Governor Martz approved $5.3 million for six projects. In addition to these grants, the Trustee Restoration Council has approved two project development grants totaling $319,268. A summary of the projects and their progress as of June 30, 2002, is included below. A table also is included Indicating the amount of money approved for each project, and the amount spent and remaining as of June 30, 2002.

Pilot Year 2000 Restoration Grants

- **Bighorn Environmental Services – Enhanced Revegetation of Silver Bow Creek Reach A , $110,80**

  Project Summary: This project will restore wildlife habitat along Reach A (the first mile) of Silver Bow Creek. Major components include planting woody and wetland plants in the floodplain and adding organic matter to backfill materials. Restoration revegetation activities will be coordinated with remedy revegetation activities.

  Progress as of 6/30/02: All planned revegetation and organic matter placement efforts have been completed on Reach A. Plantings include 8,000 willows, 7,600 wetland plugs and 2,200 cubic yards of organic matter. Coordination with remedy continues.

  Progress Reported During Current Quarter: DEQ and Mr. Prodgers have conducted planning and oversight work.

- **Deer Lodge Valley Conservation District/Bridger Plant Materials – Development of Acid/Heavy Metal Tolerant Cultivars, $141,439**

  Project Summary: This four-year (2001–2005) project is a joint effort between the Deer Lodge Valley Conservation District and the Natural Resource Conservation Service Bridger Plant Materials Center. This project will collect, test, select, grow and ultimately release indigenous native plants that demonstrate superior adaptation to the Anaconda Uplands area. Foundation seed for the releases will be produced and maintained by the Plant Center for distribution to commercial seed growers.

  Progress as of 5/31/02: The overall project is 38 percent complete. Work to date has concentrated on identifying and testing tolerant species to determine the best plant species for restoration.

  Progress Reported Current Quarter: Work continued testing plant species and sharing results.

- **Greenway Service District – Silver Bow Creek Greenway, $1,772,758**

  Project Summary: This project will develop a recreational trail corridor and restore aquatic and riparian resources along the first three miles (Reaches A through C) of Silver Bow Creek west of Butte. The Greenway activities will be coordinated with DEQ remedial actions. The planned Greenway effort involves similar activities along the entire 22-mile Silver Bow Creek stream corridor between Butte and Warm Springs Ponds over the next 10-12 years at a total estimated cost of $18 million.

  Progress as of 6/30/02: Activities in 2001 and 2002 focused on ecological tasks involving floodplain plantings and aquatic enhancement planning. These efforts occurred simultaneously with remedial revegetation actions. Bitterroot Restoration Inc. conducted the floodplain planting activities. Plantings in the Reach A floodplain include:
    - approximately 5,000 willow plugs
    - 600 shrubs
    - 100 10-foot cottonwoods, 300 five-foot aspen and 200 two-foot lodge pole pines.

  In Reach B, 4,000 willow plugs were planted along the banks. Bighorn Environmental Sciences, DEQ's revegetation contractor, directed all planting efforts. Aquatic activities involved aquatic enhancement planning by DEQ contractors for Reach C.

  Progress Reported Current Quarter: Expenditures for aquatic enhancement planning were paid to NRDP and DEQ's contractors. Of note is the evaluation performed by Confluence Inc., to identify habitat functions of Silver Bow Creek reference reaches (Divide and Whitetail Creeks). Results of the reference study will assist DEQ geomorphology contractors to incorporate additional restoration elements into Subarea Two (miles 5-10) of Silver Bow Creek.

- **Montana Fish, Wildlife and Parks – Lost Creek Watershed Project, $518,382**

  Project Summary: This four-year project (2001-2004) involves the rehabilitation of approximately 27 miles of Lost Creek, a significant tributary of the Upper Clark Fork River. The project seeks to improve water quality and fish and wildlife habitat through activities such as riparian fencing and grazing management, development of off-stream watering facilities, stabilization or relocation of certain stream segments, stream bank re-vegetation, and creation of fish passage structures. Total project costs are $1.7 million.

  Progress as of 6/30/02: No restoration fund work has started. The effective date of the contract is 7/1/02. Other funding sources have been used for the initial project activities.

- **Manley Ranch Conservation Easement, $608,048**

  Project Summary: The Manley Ranch encompasses 16,000 acres overlapping the Clark Fork-Blackfoot divide in Granite and Powell Counties, about four miles northeast of Drummond. This project acquired a conservation easement in

(Continued on page 7)

(Continued from page 6)

2001 applicable to 3,416 acres in the headwaters of Morris Creek, a tributary of the Clark Fork River. This easement will impose restrictions on certain human activities including timber harvest, ranching and development in order to preserve fish and wildlife habitat, open space and scenic views. It provides for guaranteed public access of 350 hunter-days.

The transaction was completed on March 21, 2001.

- **Z-4 Ranch Conservation Easement, $10,000**

Project Summary: This project involves partial funding of a 2,100-acre conservation easement on the Z-4 Ranch in the upper Rock Creek drainage. The easement applies to property that includes portions of the East and Middle Forks of Rock Creek. Stream rehabilitation work will be conducted on the East Fork following finalization of the easement. The easement imposes restrictions on certain human activities including timber harvest, ranching and development in order to protect open space and scenic beauty, fish and wildlife habitat and water quality, and to re-naturalize the streams and their riparian zones.

The transaction was completed on November 5, 2001.

- **University of Montana – Technical Assistance for Watershed Restoration Analysis and Planning, $9,550**

Project Summary: This project involves designing an informational database for UCFRB restoration planners. The database design will expand on the Montana Natural Resource Information System's statewide watershed information system. The project involves outreach to local watershed groups and conservation districts to determine their database needs and provide training. The end product will be the conversion of some data sets to a useable form and a report on recommendations for full database development. This report will identify UCFRB restoration planning needs, available data and data gaps, and the additional tasks and funding needed to develop an informational database.

Progress as of 6/30/02: A preliminary assessment of information needs based on a preliminary survey of potential database users was completed. In addition, information and resource gaps were evaluated and the web-site was completed.

Progress Reported Current Quarter: The project was completed with the exception of the final report.

- **Watershed Land Acquisition, $3,764,231**

Project Summary: The Rocky Mountain Elk Foundation (RMEF) holds a purchase option to acquire approximately 32,500 acres in the UCFRB from Y.T. Timber via a phased acquisition over four years with 9,000 acres slated for state ownership. The property is located between Anaconda and Georgetown Lake and includes the bulk of the Warm Springs Creek watershed not already in public ownership. The option agreement allows Y.T. Timber to conduct timber harvest activities over seven years, subject to the terms of a timber management policy.

The transaction covering 5,790 total acres was completed on February 21, 2001.

2001 Restoration Grants

- **Montana Council of Trout Unlimited – Antelope and Wood Creek Riparian Management Project ("Antelope Creek"), $10,000**

Project Summary: This project involves the rehabilitation of overgrazed sections of Antelope Creek and its tributary Wood Creek, through revegetation and plantings. The project would improve riparian habitat conditions, stream channel stability and westslope cutthroat trout habitat.

Progress of 6/30/02: The contract was executed in May 2002. Other funding sources have been used for the initial project activities.

- **Butte-Silver Bow Local Government – Drinking Water Infrastructure Replacement Phase I ("Butte Water"), $1,165,795**

Project Summary: Butte-Silver Bow County (BSB) will replace approximately 17,000 feet of inadequate water distribution lines in the City of Butte. Butte's bedrock aquifer is contaminated throughout a six square mile area of the City and these distribution lines overlay that aquifer. By fixing leaking and corroded water lines, this project will enhance the water supply from an uncontaminated source.

Progress as of 6/30/02: The contract was executed in April 2002 and construction has begun.

- **Watershed Restoration Coalition of the Upper Clark Fork – East Deer Lodge Valley Watershed Project ("East Deer Lodge Valley"), $135,941**

Project Summary: This replacement project seeks to improve fish and wildlife habitat and associated services through implementation of agricultural best management practices on rangelands on the east side of the Deer Lodge Valley between Warm Springs Ponds and Deer Lodge. This project includes riparian fencing and stream bank revegetation, development of off-stream watering facilities, and grazing management in riparian and upland areas. This project involves nine individual subprojects within several watersheds, principally the Peterson Creek and Cottonwood Creek watersheds. The project also involves the collection and analysis of additional assessment data across 122,000 acres in the East Deer Lodge Valley watershed area to assist in the evaluation of the long-term success of these nine sub projects, as well as facilitating the development of future projects.

Progress as of 6/30/02: The overall project is 38 percent complete. Task 1 – conduct nine pilot projects – planning is underway. Task 2 - collect watershed baseline data – two complete rounds of water quality monitoring completed on Cottonwood Creek, Caribou Creek, Peterson Creek, Perkins Gulch, Dry Cottonwood, Sand Hollow and Sand Creek.

(Continued on page 8)

(Continued from page 7)

- **County Water and Sewer District of Rocker – Rocker Water Reclamation and Habitat Enhancement Project ("Rocker"), $719,566**

Project Summary: This project will accomplish three broad objectives:

1. advanced wastewater treatment (primarily nutrient removal) to benefit Silver Bow Creek;
2. replacement and restoration of lost aquatic and terrestrial wildlife habitat, particularly for waterfowl, through the creation of four wetlands/ treatment cells; and
3. creating walking and wildlife viewing recreational opportunities.

The project has four main components: wastewater treatment system improvements, lift station upgrading, ultraviolet (UV) disinfection system installation, and wetlands/treatment cells construction. The 15-acre project area will contain four wetland cells totaling approximately five acres that would receive water continually from the Rocker wastewater treatment lagoons.

Progress as of 6/30/02: Withdrawn - The funding of this project was contingent upon the applicant being able to execute the needed land acquisition at or below fair market value. The applicant was unable to negotiate a reasonable price with the landowner; therefore, the project cannot be funded. The failure to negotiate the land acquisition this spring also precluded the planned coordination and associated cost savings between this project and the DEQ remediation on Reach C of Silver Bow Creek scheduled for spring 2002.

- **Greenway Service District – Silver Bow Creek Greenway ("Greenway"), $1,206,755**

Project Summary: The Greenway Service District (GSD) will continue to develop a recreational trail corridor and to restore aquatic and riparian resources along miles four and five (Reaches D through E) of Silver Bow Creek west of Butte. The Greenway activities will be coordinated with DEQ remedial actions.

Progress as of 6/30/02: The project has not started.

- **Rocky Mountain Elk Foundation – Watershed Land Acquisition ("Watershed Land Acquisition"), $2,067,673**

Project Summary: Phase 1: In 2000, RMEF received $3,764,231 in UCFRB Restoration funds to acquire 5,790 acres, approximately 65 percent of the lands slated for state ownership.
Phase 2: RMEF applied for $2,065,700 in Restoration funds to acquire the remaining 3,181 acres.
Together, the two parcels acquired – the Garrity Mountain parcel (6,706 acres) and the Clear Creek parcel (2,265 acres) – provide prime wildlife habitat and numerous recreational opportunities.

The transaction covering 3,181 total acres was completed on December 20, 2001.

Project Development Grants

- **Opportunity Groundwater Injury Assessment, $309,268**

Project Summary: With funds approved for this project in July 2001, Anaconda Deer Lodge County (ADLC) will:

- identify the extent and magnitude of contamination in the shallow Opportunity aquifer;
- identify feasible water supply options for Opportunity, if it is determined that the aquifer is injured;
- develop a feasible alternative to replace the community's water supply; and
- prepare a project grant application for funding assistance to develop and construct a replacement water supply.

The project will be phased in, subject to NRDP review and approval. If results indicate that the Opportunity water supply is or is likely be affected by mining activities in the area, ADLC intends to submit a groundwater replacement project grant application.

Progress as of 6/30/02: Initial sampling showed that arsenic or heavy metals did not exceed state standards. Additional sampling was performed in spring 2002, but the results have not been finalized.

Progress Reported Current Quarter: None

- **Douglas Creek Recreation Area and Fishery, $10,000**

Project Summary: This project involves collecting necessary information to determine if re-establishment of the Douglas Creek reservoir near Hall is technically, scientifically and financially feasible. The Douglas Creek reservoir supported a healthy population of native trout and was a popular local fishery from the 1960s until 1997, when its earthen dam was breached.

Progress as of 6/30/02: The contract was finalized in January 2002 and the applicant has initiated investigation efforts.

Progress Reported Current Quarter: None

DRAFT 2002 RESTORATION WORK PLAN AVAILABLE

The Draft 2002 Upper Clark Fork River Basin Restoration Work Plan has been released and is available for public comment. This document can be found at local libraries, on the Department of Justice website at www.doj.state.mt.us/ls/damlit/htm, or by contacting Kathy Coleman at 406-444-0229 or at nrdp@state.mt.us.

Written comments on the projects recommended for funding should be **postmarked no later than October 11, 2002,** and mailed to: State of Montana, NRDP, PO Box 201425, Helena, MT 59620-1425; faxed to (406) 444-0236; or emailed to nrdp@state.mt.us

The following table shows the amount approved for each Pilot Year 2000 project, Grant Cycle 2001 project and the amount spent on each project as of June 30, 2002.

	Amount Approved	Spent as of 6/30/02
Pilot Year Restoration Grant 2000		
1) Greenway	$1,772,758.00	$111,188.32
2) Bighorn Environmental	$110,800.00	$76,300.71
3) Bridger Plant Materials	$141,439.00	$44,462.36
4) Lost Creek	$518,382.00	$0.00
5) Watershed Land Acquisition Org 123	$3,764,231.00	$3,763,925.16
6) Z-4	$10,000.00	$10,000.00
7) Manley Ranch	$608,048.00	$608,048.00
8) University of Montana	$9,550.00	$4,357.52
Total Pilot Year Grant Funds	**$6,935,208.00**	**$4,618,282.07**
Grant Cycle 2001		
1) Opportunity PDG	$309,268.00	$37,011.70
2) Douglas Creek PDG	$10,000.00	$0.00
3) Greenway	$1,206,755.00	$0.00
4) Watershed Land Acquisition	$2,067,673.00	$2,067,672.75
5) Butte Water	$1,165,795.00	$0.00
6) Antelope Creek	$10,000.00	$0.00
7) Rocker *	$719,566.00	$0.00
8) East Deer Lodge Valley	$135,941.00	$10,218.95
Total Grant Year 2001 Funds	**$5,624,998.00**	**$2,114,903.40**
*The Rocker project was withdrawn.		
TOTAL GRANT FUNDS	**$12,560,206.00**	**$6,733,185.47**

A FAREWELL MESSAGE FROM PAT MUNDAY

I served 4 good years as Governor Racicot's appointee to the Natural Resource Damage Program's Advisory Council. Montana's damage settlement with Arco provides us a rare opportunity to restore and replace natural resources for future generations. As a Council, we were an extremely diverse body. But we all shared a table, set our differences aside, and worked in a spirit of consensus and collaboration. I am very proud of the wise recommendations from the Advisory Council regarding the investment of the NRD Fund, promotion of public education about remediation and restoration, and selection of restoration projects that will long benefit citizens of and visitors to the Upper Clark Fork River Basin. The NRD Program staff are among the finest professionals I have ever worked with. Thank you for this opportunity to contribute to a better future. All good wishes for the new and continuing members of the Advisory Council. - Pat Munday

BUTTE STUDENT WINS NATURAL RESOURCE DAMAGE PROGRAM'S ECOLOGY AWARD

Emily Munday, a seventh-grade student at East Junior High School in Butte, was awarded the first annual Natural Resource Damage Program's Ecology Award. Emily, one of over 600 students who competed in the Montana Tech Science and Engineering Fair, won a $100 savings bond and a certificate recognizing her efforts.

Judges chose the project that best demonstrated the program's commitment to the environment. Emily's project, "Food for Thought II: A Comparative Benthic Invertebrate Survey," demonstrated the integral connections within natural systems and the influence human activities have on those connections.

Emily's project involved taking samples from a clear, healthy stream, the Mill-Willow Bypass, and two sites on Silver Bow Creek, one of which has recently been remediated. She tested the water's acidity and conductivity, a measure of the dissolved metals it contains. As Emily hypothesized, the Mill-Willow Bypass contained the most benthic invertebrates, followed by the remediated area of Silver Bow Creek.

In addition to her science experiments, Emily enjoys swimming, volleyball, cross-country skiing and theatre. She is the daughter of former council member Pat Munday. Congratulations Emily!

STATE OF MONTANA
DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE PROGRAM
1301 EAST LOCKEY
PO BOX 201425
HELENA, MT 59620-1425

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RIVERWATCH

Upper Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

RiverWatch

MARCH 2003 *Volume 4 Number 1*

Know your Advisory Council members...

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Anaconda

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Vice Chair
Missoula

Haley Beaudry
Butte

Matt Clifford
Missoula

Larry Curran
Butte

Jerry Harrington
Butte

John Hollenback
Gold Creek

Judy Jacobson
Butte

Gene Vuckovich
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Jules Waber
Deer Lodge

Jan Sensibaugh
Director
MT Dept. of Environmental Quality

Jeff Hagener
Director
MT Dept. of Fish, Wildlife and Parks

Carol Fox
Restoration Program Chief
NRDP/ MT Dept. of Justice

Carole Lankford
Tribal Representative
Confederated Salish & Kootenai Tribes

Darlene Koontz
U.S. Dept of the Interior

To find out more, call or write to:

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NRD Program
P. O. Box 201425
Helena, MT
59620-1425
(406) 444-0229
Email—nrdp@state.mt.us

Four Restoration Projects Approved

By Nikole Williams

Governor Judy Martz approved four projects requesting $8,986,057 in Restoration funds in December 2002. The 2002 Grant Cycle was the third cycle since the grant program's inception in 2000. To date, 18 projects have been funded for a total of $21.1 million and seven project development grants have been funded for a total of $416,584. Below is a summary of the newest projects.

"Butte Waterline"

Butte-Silver Bow City County will receive $1,168,842 in Restoration funds to be used for the replacement of approximately 17,000 feet of inadequate water distribution lines in the City of Butte. This is the second year that Butte-Silver Bow has requested funding for waterline replacement. It has been determined that Butte's bedrock aquifer is so severely contaminated that it would take thousands of years for it to recover naturally.

"Anaconda Waterline"

Funding was approved for two projects totaling $749,942. The first project is the replacement of a 104-year old, leaking 10-inch waterline along Anaconda's Main Street. An estimated 1.75 million gallons of water are lost through Anaconda waterlines per day. Repairing these leaks will provide the City of Anaconda additional water resources as an alternative to developing a new source of water.

Anaconda-Deer Lodge City County will also receive funds for the installation of a new waterline to the Bowman Field airport. Groundwater resources are rather limited as the groundwater aquifer east of Anaconda is contaminated with metals associated with past mining activities. Because of the underlying groundwater contamination, drilling a water well is not as cost effective as installing an 8-inch waterline to the airport from the 16-inch Warm Springs Creek waterline.

"Greenway"

Over the next two years, the Greenway Service District will receive $5,067,273 to develop a recreational trail corridor and to restore aquatic and riparian resources along miles six and seven of the Silver Bow Creek west of Butte. This year's proposal will allow for improved e coordination of the Greenway activities and remedial actions. The major components include an estimated $2.7 million for removal of approximately 336,000 cubic yards of tailings and impacted soils and $1.6 million for enhanced aquatic and revegetation efforts.

In the last two years, the Greenway Service District has been awarded $2.9 million in Restoration funds for development of the Greenway trail and restoration of aquatic and riparian resources and services along the first five miles of Silver Bow Creek.

"Stuart Mill Bay"

The Conservation Fund received $2 million to acquire the 363 acre Stuart Mill Bay property located along the southeast portion of Georgetown Lake for public ownership, use and management. The purchase will acquire fish and wildlife habitat and public access for fishing, hunting, camping and other recreation uses. The Stuart Mill Bay property has about two miles of lake frontage and includes wetlands, grasslands and forestlands. The property has historically been open to public use and informally managed as a dispersed campground, day-use site and fishing access site. The property will be managed by the Department of Fish, Wildlife and Parks. This land transaction was completed on March 17, 2003.

Advisory Council Welcomes Butte Native

Butte native Larry Curran has been active in community development issues for the past 25 years. He holds degrees from Montana Tech and Montana State University and has worked in healthcare administration for the past 15 years. Prior to returning to Butte in 1986, Curran worked for the State of Montana administering grant programs for the Montana Department of Commerce.

Active in the community, Curran has volunteered time with numerous local boards and organizations including the Butte-Silver Bow Tax Appeals Board, the Zoning Board of Adjustment, United Way, Chamber of Commerce, Butte Local Development Corporation, Southwest Montana Development Corporation, Community Health Center, Business Development Center, the Montana Community Foundation and others.

Curran has a strong interest in the Superfund cleanup effort in Butte and surrounding area and has been active in the restoration of the Silver Bow and Blacktail Creeks for several years. Beginning in 1988, Curran served on numerous committees involved in remediation and restoration of the Creeks and their drainages. Most recently, he served as a member of the Greenway Service District.

Larry serves on the Council as a representative of the public active in conservation or recreation.

"I am thrilled to have an opportunity to play a role in this important process," Curran said recently. "A complete cleanup of Silver Bow Creek and the upper Clark Fork River is essential if we hope to one day witness the transformation of this waterway into a vital recreation area for all to enjoy. My appointment to the Advisory Council provides me with an opportunity to participate in critical decisions and work to promote a complete clean-up."

In his leisure time, Curran enjoys camping, fishing and spending time with his wife and three sons.

A Look at Butte Priority Soils Operable Unit

By Doug Martin

The Butte Priority Soils Operable Unit (BPSOU) site is part of the Silver Bow Creek NPL site administered by EPA. BPSOU covers an area of approximately five square miles and includes the part of Butte north of Silver Bow Creek, west of the Berkeley Pit, east of Montana Tech, the town of Walkerville. It extends south from Silver Bow Creek to Timber Butte (see map on page 3).

Mining practices created mine waste including numerous waste rock dumps, and tailings deposits along Silver Bow Creek, Metro Storm Drain, and throughout the City of Butte. In 1987 EPA added BPSOU to the Silver Bow Creek NPL site and began investigations to determine the nature and extent of contamination. The Phase II Remedial Investigation Report, finalized in 2002, identifies three areas of contamination: Solid Media, Groundwater, and Surface Water.

- Solid media includes contaminated soils, solid media in residential living spaces, waste rock and tailings.

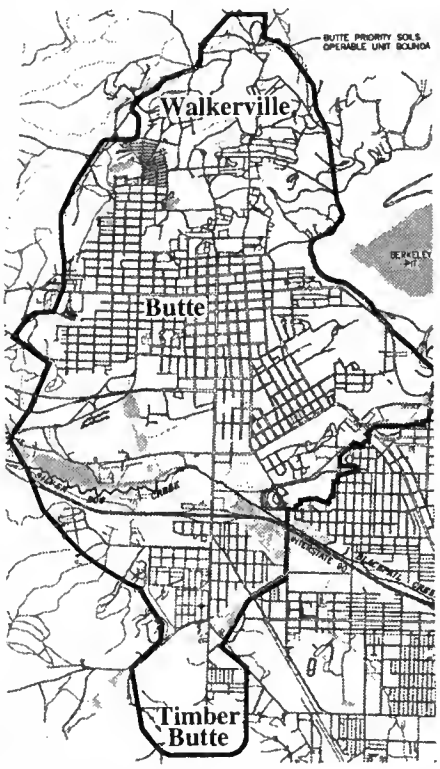
(Continued on page 3)

(Continued from page 2)

- Groundwater includes the alluvial aquifer and bedrock water associated with Butte Area One and saturated mine wastes that are sources of metals contamination to groundwater.

- Surface water is water in Silver Bow Creek and storm water runoff.

Numerous Time Critical Removal Actions (TCRAs), Expedited Response Actions (ERA) and activities have been conducted at BPSOU since 1987 in an attempt to address primarily human health issues throughout the site. EPA estimates that the Potential Responsible Parties (PRPs) have spent over $50 million on these remedy actions within BPSOU to date. These actions include work at approximately 203 sites throughout BPSOU, which includes the removal of over 1.4 million cubic yards of waste, primarily Colorado Tailings. These changes are visible at the Colorado Tailings, the railroad grades and various mine dumps around Butte. Some activities that are not so outwardly apparent are the residential yard lead and arsenic screening conducted by the Butte Silver Bow Health Department.



The EPA and DEQ, along with other interest groups, are reviewing the February 2003 draft Feasibility Study submitted by the PRP group consisting of ARCO, three railroad companies and Butte Silver Bow County. Following the completion of the final Feasibility Study, scheduled for late June 2003, EPA will issue a Proposed Plan for public review. The Proposed Plan will outline the proposed remedy actions to be implemented to clean up the remaining wastes within BPSOU. EPA plans to issue the Record of Decision for the site in December 2003.

The NRD Butte Area One groundwater and surface water injury area is within BPSOU. Area One extends from the upper end of the Metro Storm Drain in Butte to the west of the downstream end of the former location of the Colorado Tailings along Silver Bow Creek. The NRD injury assessment determined that the extent of alluvial groundwater injury is 563 acres, which will continue to be contaminated for thousands to tens of thousands of years absent removal of sources and implementation of effective remediation. In addition, the injury to surface water resources of Silver Bow Creek is another aspect of the NRDP claim. The injury to Silver Bow Creek is associated with contaminated groundwater and surface water entering the stream throughout the LAO area. As discussed above, groundwater within the alluvial aquifer is contaminated and enters Silver Bow Creek. Silver Bow Creek is also affected by surface water runoff associated with storm water flowing off the Butte hill. Storm water is contaminated as precipitation from flows across mine wate and contaminated soils located within BPSOU. Untreated storm water that flows into Silver Bow Creek alters water quality and aquatic life. The NRDP will update its 1995 restoration plan and claim for Butte Area One following EPA's determination of remedy.

The NRDP has not allowed the expenditure of NRD grant funds within BPSOU because of the pending litigation on the NRD claims and pending remedy decisions at the site. Since the remedy actions are still unknown, NRDP cannot fund projects that might be completed or undone by a remedy action. As litigation claims are settled, projects within BPSOU may be considered for funding. The Butte waterline replacement projects funded by NRD grant funds are associated with the Mine Flooding Operable Unit, which has been the subject of a completed remedy decision and settled NRD claim.

River Watch is published by the State of Montana's Natural Resource Damage Program and is paid for out of the UCFRB Restoration Fund. The editorial content is determined by the UCFRB Remediation and Restoration Education Advisory Council. Individual articies are contributed by various people or entities representing different viewpoints, and the opinions expressed are those of the authors and do not necessarily reflect the opinions of the State of Montana, its agencies or employees.

Seed Development Project

By Leslie Marty

The Development of Acid/Heavy Metal-Tolerant Cultivars (DATC) project received a 4-year UCFRB restoration grant in 2000, which supplements an EPA Mine Waste Technology Program grant. The project is sponsored by the Deer Lodge Valley Conservation District and headquartered at the NRCS Plant Materials Center in Bridger, Montana. The overall goal of the project is to release plant materials that are suitable for the revegetation of mine-affected lands in western Montana. These plants exhibit tolerance to soils characterized by elevated heavy metals concentrations and low pH.

Installation of the Seed Mixture Treatment Study took place in October 2001 and was done with a Kincaid cone planter.

The scope of the project encompasses— 1) greenhouse testing of promising acid/heavy metal tolerant ecotypes growing in low pH and heavy metal contaminated soil media; 2) comparative field testing of selected herbaceous seed mixtures; 3) comparative field testing of promising woody species; 3) establishment, production and maintenance of seed increase blocks of superior performing plant materials; 4) release of superior plant materials and 5) technology transfer of research results, best management practices and products.

Results from the Greenhouse Comparative Evaluation Planting (CEP) study identified several superior plant ecotypes. Subsequently, four seed mixtures containing various blends of ten grass and four forb species were field tested in 2002 at two affected sites near Anaconda. The Seed Mixture Treatment Study compared the four "local" seed mixtures (originating from seed collected within the Anaconda Smelter Superfund Site) to four "non-local" seed mixtures containing cultivars currently on the market. First growing season results indicated that the "local" seed mixtures were better adapted to Anaconda's soil and climatic conditions than the cultivated seed mixtures. The seed mixture treatment that performed well at both sites consisted of 30 percent basin wildrye, 30 percent slender wheatgrass, 25percent redtop, 5 percent western wheatgrass and 10 percent forb species. It is not known, however, which of the species in the mix accounted for the emergent seedlings, as seedlings were too immature to reliably identify.

In the fall of 2000, the Woody CEP was installed near Anaconda on soils affected by acidity and heavy metal contamination. This study comparatively tested 19 accessions of seven woody species. "Local" stock, originating at the Anaconda Smelter Superfund Site, was compared to "non-local" nursery stock of the same species from other areas of Montana, Colorado, Utah and Wyoming. Both first and second growing season (2001 and 2002) results supported the use of "local" stock, which exhibited superior growth, vigor and survival in six of the seven species tested. Overall, ponderosa pine and western snowberry were the hardiest species.

The outcome of these studies has resulted in three plant releases. In 2002, Washoe Germplasm basin wildrye, Prospectors Germplasm common snowberry and Old Works Germplasm fuzzytongue penstemon were released through the Montana Seed Stock Program. This process ensures that certified seed of the releases is available for distribution to commercial seed growers through the Montana Seed Growers Association.

These three releases are native species, indigenous to western Montana. Basin wildrye, a tall bunchgrass, and common snowberry, a rhizomatous shrub, provide wildlife food, cover and shelter as well as soil stabilization. Fuzzytongue penstemon, a purple-flowering forb, performs well on poor soil in dry open terrain and is considered desirable forage for deer, antelope, and some birds. It provides soil erosion control and adds diversity to the plant community.

The introduction of these and upcoming releases will provide reclamationists with a greater array of tools to create landscapes that provide long-term soil stability and wildlife habitat. Potential future releases include ecotypes of silver buffaloberry, Wood's rose, western snowberry, tufted hairgrass, slender wheatgrass, Indian ricegrass, alpine bluegrass, silverleaf phacelia and pacific aster.

FEATURED ARTICLE(S):

Previous newsletters have focused on natural resource injuries present in the Clark Fork River Basin, which were subject of the Montana v. ARCO lawsuit. This issue will discuss the construction and weed control efforts along Silver Bow Creek.

SILVER BOW CREEK CONSTRUCTION UPDATE

By Greg Mullen

Remedial actions by MDEQ are successfully continuing along miles four and five of Silver Bow Creek. Tailings removal and stream reconstruction are the major remedial efforts taking place along Sub-area One, which is the first five-mile SBC section downstream of Butte. Tailings along Silver Bow Creek have been stored and capped at a local repository or hauled to the Opportunity Ponds near Anaconda by train. Removal of 822,000 cubic yards of tailings in Sub-area One is expected to be complete this spring, when construction should begin in the next five-mile section of Silver Bow Creek, known as Sub-area Two. Sub-area Two contains about 1.6 million cubic yards of tailings, which cover about 350 acres of the Silver Bow Creek Floodplain. Cleanup of Sub-area Two is anticipated to take about three years.

The UCFRB 2002 Greenway grant will augment DEQ's efforts to remediate the severely impacted floodplain along Sub-area Two. An estimated $2.7 million will be used to remove a significant portion of the 160-acre Ramsay Flats tailings deposit located in the middle mile and a half of Sub-area Two. Additional enhancements to remedy include establishing a more natural stream channel and floodplain as well as establishment of native vegetation and wetlands along the 350-acre riparian corridor in Sub-area Two. A March 2003 fact sheet that outlines the coordinated remedial and restoration activities along SBC is available on the NRDP website (www.doj.state.mt.us) or upon request from NRDP.

Weed Control Efforts Along Silver Bow Creek

By Greg Mullen

Controlling weeds along the newly constructed segments of Silver Bow Creek is a crucial component of a successful revegetation effort. Weed control activities along the riparian corridor include: *

Prevention: Weeds have been limited with chemical controls prior to remediation in areas where vehicles and equipment operate.

Clean Backfill: Backfill floodplain soils have been free of weed seeds at the time of plantings.

Land Management: Hand spraying of any weeds which happen to invade the newly planted floodplain areas has been implemented.

Plant Competition: Desired plant species are introduced in a method that uses the resources in such a way that makes weed infestation less likely.

Clean Compost: To assist plant establishment, compost has been used rather than stockyard manure because uncomposted manure brings with it the risk of introducing weed seeds into the seedbed.

To date, these five weed control activities have worked well along the newly constructed floodplain of Silver Bow Creek. It is imperative, however, that landowners near the constructed floodplain control weeds to maintain a weed-free riparian corridor in the long-term.

* Rich Prodgers of Bighorn Environmental Sciences provided information for this article. He is managing the remedial and restoration revegetation efforts along Silver Bow Creek.

YOUR INPUT IN *RIVER WATCH* IS DESIRED

The Upper Clark Fork Remediation and Restoration Education Advisory Council would like *RiverWatch* to be an interactive newsletter. We seek contributions from individuals representing the varied experiences and perspectives on UCFRB remediation and restoration issues. If you are interested in commenting on or providing a *RiverWatch* article or have suggestions for future articles, contact Kathy Coleman of the NRDP at 444-0229 or email kcoleman@state.mt.us

Phases of the Federal Superfund Process

By Carol Fox

The following materials are provided in response to a request from Council Member Larry Curran for a summary of the status of the Clark Fork Federal Superfund sites and general Superfund process. Larry felt this summary would be a useful tool to help Council members and the general public understand the remediation and restoration activities in the Upper Clark Fork River Basin. The guidance document provides a flow chart and description of the various phases of the Superfund process and a table indicating the status of the Clark Fork sites in that process. Due to space constraints, maps of the areas are not included. Copies of the full document are available from the NRDP upon request.

Phases of the Federal Superfund Process[1]

Site Assessment: After discovery of a potential hazardous substance site, the Environmental Protection Agency (EPA)[2] conducts a site assessment to determine whether hazardous materials are present at the site. The site assessment consists of two phases--a preliminary assessment and a site inspection (PA/SI). During the preliminary assessment, EPA searches permits, titles and other records to gather data about past activities and to assess the need for further investigation. During the site inspection, field work is conducted to assess the severity of contamination problems.

NPL Listing: After completion of the site assessment, a Hazard Ranking System (HRS) is completed to determine whether the site ranks high enough to be proposed for the National Priorities List (NPL) based on the risks it poses to public health and the environment. EPA most commonly proposes a site for the NPL when the HRS score is above 28.5. Other circumstances that trigger NPL listing include a state designating the site as a high priority or a health advisory being issued for the site. EPA solicits public comment on a proposed NPL listing.

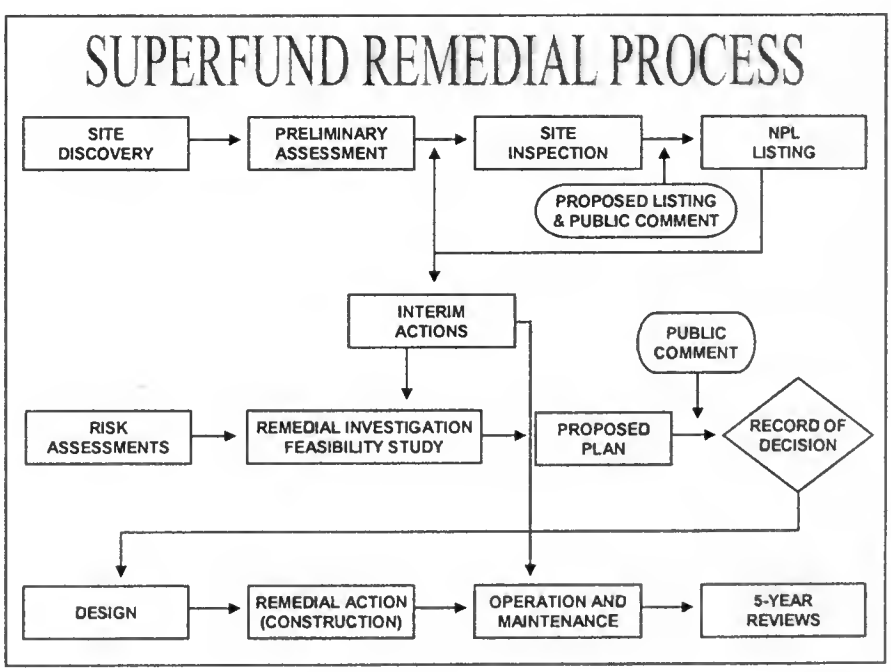
Interim Actions: Throughout the Superfund process, interim removal actions can be conducted to reduce the immediate threats to human health and the environment. Three types of interim removal actions can be conducted: 1) emergency response actions, which are short-term actions requiring the immediate removal of hazardous materials; 2) time-critical removal actions that require a six month or shorter planning period and 3) non-time critical removal actions that involve a planning period longer than six months.

Remedial Investigation/Feasibility Study: After a site is listed on the NPL, EPA initiates a remedial investigation/feasibility study. A remedial investigation (RI) is an in-depth study designed to gather data needed to determine the nature and extent of contamination at a Superfund site; establish site cleanup criteria; identify preliminary alternatives for remedial action and support technical and cost analyses of alternatives. A feasibility study (FS) considers different alternatives to cleaning up the site and recommends selection of a cost-effective alternative. The remedial investigation is usually done with the feasibility study. Together they are referred to as the "RI/FS." As part of the RI/FS, a risk assessment is completed to determine the risks to public health and the environment and risk-based cleanup levels.

Record of Decision: At the conclusion of the RI/FS, the EPA develops for public comment a Proposed Plan that summarizes the remedial alternatives presented in the RI/FS, the preferred alternative and the rationale for the preferred alternative. After EPA considers comments on the Proposed Plan, it selects a final remedy, which is published in the Record of Decision (ROD). The ROD is the official documentation of how EPA considered the remedial alternatives and why EPA selected the final remedy. It describes the site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, scope

1) Most of the information provided herein is from the EPA's "Superfund Community Involvement Handbook" dated April 2002.

2) EPA may also authorize states to conduct federal Superfund regulatory activities. In Montana, the Department of Environmental



and role of response action and the remedy selected for cleanup. A Responsiveness Summary is attached to the ROD and responds to comments on the Proposed Plan received during the public comment period.

Remedial Design/Remedial Action (RD/RA): Remedial Design/Remedial Action (RD/RA) is the phase during which EPA designs and implements the remedy selected in the ROD. The RD phases includes development of engineering drawings and specifications for a site cleanup. The RA phase is the actual implementation (construction) of the remedy.

Operation and Maintenance: After the remedial action is completed, operation and maintenance activities are conducted to ensure that the action is effective. If wastes are left in place, EPA must conduct a review of the remedy every five years.

Area	Site Assessment/ NPL (1)	Interim Cleanup Actions	Remedial Investigation/ Feasibility Study	ROD/ ESD (2)	Remedial Design/ Remedial Action	Operation and Maintenance
Anaconda	1983					
Mill Creek		X	1987	ROD-1987	1988	
Flue Dust		X	1991	ROD-1990	1993	ongoing
Arbiter/Beryllium		X	EE/CA 1990	(4)	1992	ongoing
Old Works/East Anacona		X	EE/CA 1991 RI/FS 1994	ROD-1994	2001	ongoing
Regional Water/Waste/Soils		X	1997	ROD-1998	ongoing	ongoing
Smelter Hill			1996	(4)	ongoing	ongoing
Community Soils		X	EE/CA 1991 RI/FS 1996	ROD-1996	ongoing	ongoing
Montana Pole (Butte)	1987	X	1993	ROD-1993	ongoing	ongoing
Milltown Reservoir	1983					
Water Supply		X	1983 water supply study	1984 ROD 1985 Supplemental ROD	1984	ongoing
Reservoir Sediments			2002	ROD-2003 (3)		
Clark Fork River	Moved from SBC in 1987	X	2003	ROD-2003 (3)		
Silver Bow Creek (SBC)	1983					
Warm Springs Ponds		X	X	ROD-1990	1995	ongoing
Streamside Tailings			1994	ROD -1995; ESD -1998	ongoing	ongoing
Rocker		X	1995	ROD-1995	1997	ongoing
Mine Flooding		X	1994	ROD-1994; ESD-2002	ongoing	
Priority Soils	Added in 1987	X, ongoing	ongoing	ROD-2003 (3)		On interim actions
Active Mine Area						Mine reclamation under permit
Non-priority Soils						

(1) The date indicated is the date of completion of the action. For site assessment/NPL, the date is the NPL listing date.
(2) ROD-Record of Decision; ESD- Explanation of Significant Differences.
(3) Scheduled ROD completion date.
(4) This was covered as part of Anaconda Regional Water and Waster operable unit ROD.

Frequently Asked Questions About the Application Process

The following "frequently asked questions" are relevant to the Upper Clark Fork River Basin (UCFRB) Restoration Grant Application Process.

1. Where are there examples of the types of restoration and replacement projects that are eligible for funding? Chapter 5 of the *UCFRB Restoration Plan Procedures and Criteria (RPPC)* provides examples of possible restoration and replacement resources. Another source for examples of eligible projects are those that have been funded in the last three grant cycles. This information is available from the Natural Resource Damage Program (NRDP) website, www.doj.state.mt.us.

2. Are there areas in the UCFRB that are "off-limits" to funding consideration at this time? Yes. There are certain areas in the Basin where projects will not be considered for funding. Those areas are described in further detail below. This guidance applies to all types of grant requests, including project development grants, regardless of the amount requested. When in doubt as to whether the project you are considering falls in one of these categories, we suggest you consult the NRDP or submit a pre-application before spending a lot of time and effort on an application.

The State has not settled its restoration damage claim for three sites:

1) Smelter Hill Area Upland Resources ("Anaconda Uplands"): The Anaconda Uplands is an area approximately 18 square miles north and south of Anaconda that is includes portions of Smelter Hill, Stucky Ridge and the Mount Haggin Game Management Area.

2) Butte Area One Ground and Surface Water Resources: Butte Area One extends from the upper end of the Metro Storm Drain in Butte to the west or downstream end of the former location of the Colorado Tailings along Silver Bow Creek.

3) Upper Clark Fork River Aquatic and Riparian Resources: The Upper Clark Fork River site encompasses the floodplain of the Upper Clark Fork River from the Warms Springs Ponds to the Milltown Reservoir.

As set forth in the minimum qualifications in the *RPPC*, if consideration or implementation of a project would interfere, potentially interfere, overlap or partially overlap with the State's remaining natural resource damage claims in the Montana v. ARCO lawsuit or with proposed restoration determination plans for these three sites, the project is not eligible for funding consideration. Such grant projects, which include restoration actions or property acquisitions within the Upper Clark Fork River floodplain, will not be considered until both completion of Montana v. ARCO and issuance of the Superfund Record of Decision (ROD). Work in the tributary watersheds to the Upper Clark Fork River may be considered on a case-by-case basis.

The *RPPC* also indicates that projects proposed in areas that are the subject of pending RODs will not be considered for funding at this time. The U.S. Environmental Protection Agency has not completed its determination of the final remedy for the Upper Clark Fork River between the Warm Springs Ponds and Milltown Reservoir or the Butte Priority Soils operable units. The Butte Priority Soils Operable Unit encompasses the part of Butte north of Silver Bow Creek, east of Montana Tech, the town of Walkerville and extends south from Silver Bow Creek to Timber Butte. Butte Area One is part of this operable unit. Furthermore, projects in other Superfund operable units, particularly those like Anaconda, where the remedial design has not been completed, may also be denied on the grounds of potential interference with the remedial action.

Finally, projects located in the Big Blackfoot River watershed are ineligible for funding at this time. As set forth in the *RPPC*, no work in the Big Blackfoot River watershed will be considered until there is scientific determination that efforts to restore native trout restoration in the UCFRB would be uneconomical or impractical. This could be well after implementation of the response actions along the Upper Clark Fork River. Projects in the Big Blackfoot River watershed would be rejected at the minimum qualifications stage.

3. If a project addresses a mining impact, doesn't that qualify it for funding consideration? No. Just because a project addresses a mining impact does not mean it is eligible for funding consideration. Restoration funds may only be used to restore or replace the injured natural resources and/or the ser-

(Continued on page 9)

(Continued from page 8)

vices lost as a result of releases of hazardous substances by ARCO or its predecessors that were the subject of Montana v. ARCO. The application provides a summary of the injured resources and lost services covered in Montana v. ARCO (see pp. A-3 to A-4), which are described in further detail in Chapter 2 of the *RPPC*. As indicated therein, Montana v. ARCO did not cover all types of impacts from mining activities in the Basin; rather, it covered specific injured resources and lost services.

Restoration refers to actions taken to return the injured resources and services to their baseline condition. Replacement actions create or improve resources and services that are the same as or very similar to the ones that have been injured or lost. A project that simply addresses the impacts of mining —, subsidence, for example — would not be eligible for Restoration funds unless the project also addresses, in a substantial way, the adverse impacts of hazardous substance contamination on natural resources. In addition, projects do not have to address mining impacts to be eligible for funding. For example, an eligible replacement project would be one that would improve degraded aquatic habitat outside an injured area, regardless of the cause of contamination, because the project would enhance a resource equivalent to the injured resource (aquatic habitat) covered under Montana v. ARCO.

4. Can Restoration funds be used to compensate for the economic damages to private individuals and entities caused by historic mining activities, like the loss of agricultural productivity caused by the emissions from the Anaconda smelter? **No.** Private individuals, including farmers and ranchers, have suffered economic harm as a result of injuries to the State's natural resources in the Upper Clark Fork River Basin. However, the natural resource damage provisions in federal law do not provide for the recovery of damages sustained by private individuals or entities, including losses of agricultural productivity. They only provide for recovery of damages to public natural resources and services. Hence, the State made no claim for such economic losses in Montana v. Arco, and spending Restoration funds for such purposes would not be permissible. The State can, however, fund work on private land if the principal result of such work would be to replace or restore injured resources or lost services.

5. Can Restoration funds be used for economic development projects? **No.** Restoration funds can only be used to restore or replace the injured natural resources and/or the services lost as a result of releases of hazardous substances by ARCO or its predecessors that were the subject of Montana v. ARCO. If a project's primary purpose is to stimulate economic development, then it will not meet this legal threshold for funding. Restoration or replacement projects can, however, result in secondary economic benefits. As areas are restored, they will become more attractive to area residents and visitors. For example, improving fish habitat in the Basin will improve fishing opportunities, increase angler-days and help support the local businesses that are tied to outdoor-based recreation and tourism. Also, restoration and replacement projects can often involve the employment of local individuals and expenditures that contribute to the local economy.

6. Is funding available to help develop project ideas and collect the information needed to submit an application? **Yes.** You can apply for a project development grant to help develop a project. If the planning costs are $25,000 or less, use the Short Form. If the costs are greater than $25,000, use the Long Form.

7. Can I apply for a multi-year project? **Yes.** There are no limits on multiple year grants or time to expend grant amounts in the *RPPC*. The Trustee has adopted a multi-year funding policy that gives the Trustee the flexibility to approve full or partial funding of multi-year projects. Projects fall into one or two categories:

1. Multi-year projects that would be approved with the expectation that they will be funded to their completion or, at least, for a certain number of years.

2. Multi-year projects that would be approved for the first year's funding with the expectation that they will be resubmitted for approval in a subsequent year.

8. If I am a private entity applying for Restoration funds, will I have to bid the work? **Possibly.** Expenditures of grant funds must comply with applicable state procurement laws and regulations. If you are a private entity applying in partnership with a governmental entity, that governmental entity must have procured your services in compliance with state procurement laws that are applicable to that entity. If you are the only applicant, the project must be bid if it exceeds $5,000, unless the State has determined that a sole source exception applies. If the project is between $5,001 and $25,000, then a limited solicitation is required; above $25,000, a formal invitation to bid or request for proposal is required (see pp. A-8 to A-9).

9. If a project development grant is funded, does that mean the implemented project will be funded? **No.** The approval of a project development grant does not guarantee the subsequent full project will be funded. The full project will need to go through the grant evaluation and funding selection process provided for in the *RPPC*. Consistent with Restoration Program guidance, the evaluation of a project development grant includes the evaluation of the entire project to the extent possible, since only sound restoration or replacement proposals should be considered for start-up funding.

1,100 copies of this public document were published at an estimated cost of $1.08 per copy, for a total cost of $1,188.00, which includes $528.00 for printing and $660.00 for distribution.

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DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE PROGRAM
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Clark Fork River Basin Remediation and Restoration Education Advisory Council
Promoting public understanding through knowledge

River Watch

SEPTEMBER 2003 Volume 4 Number 2

Know your Advisory Council members. . .

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DRAFT 2003 RESTORATION WORK PLAN OUT FOR PUBLIC COMMENT

By: Kathleen Coleman

The State of Montana Natural Resource Damage Program (NRDP) has released its 2003 *Draft Upper Clark Fork River Basin Restoration Work Plan* for public comment. This document contains the State's draft funding recommendation for the 2003 grant cycle.

In March 2003, the NRDP received six grant applications for a total funding request of $5,301,099. Subsequently two applicants reduced their funding requests, thereby reducing the total funding request to $4,816,656.

After preliminary review, the NRDP determined all six projects met minimum qualifications. The NRDP then evaluated the projects according to criteria specified in the *UCFRB Restoration Plan Procedures and Criteria* document.

In August 2003, the UCFRB Remediation and Restoration Education Advisory Council (Advisory Council) reviewed and voted on their recommendations for funding. The Advisory Council recommendations, as well as the NRDP staff recommendations were then brought before the Trustee Restoration Council, which is comprised of the Governor's Chief of Staff and the Directors of Fish, Wildlife and Parks, Department of Environmental Quality, Department of Natural Resources and Conservation, as well as Attorney General Mike McGrath. The Trustee Council voted on which projects they would like to recommend for funding and directed the staff to put those recommendations out for public comment. The table below provides a summary of the Trustee Restoration Council's draft funding recommendations.

(Continued on Page 6)

Table 1 Summary of TRC Draft Funding Recommendations

Project	Requested Restoration Funds	Recommended Restoration Funds
#1 Basin Dams	$ 503,006	$ 503,006
#2 Butte Waterline	$ 1,188,905	$ 1,188,905
#3 Anaconda Waterline	$ 995,000	$ 995,000
#4 Upper Willow Creek	$ 307,758	$ 282,758
#5 Thompson Park	$1,282,539	$ 0
#6 East Valley	$ 539,458	$ 408,810
TOTAL	**$ 4,816,656**	**$ 3,378,479**

GUIDANCE AVAILABLE

The Natural Resource Damage Program's website located at www.doj.state.mt.us under "Montana Lands" now contains valuable guidance to assist potential applicants for grant projects and provide general information. The Natural Resource Damage Program, in consultation with the UCFRB Remediation and Restoration Education Advisory Council, developed this guidance. Following is a list of guidance available from the website or upon request from the NRDP.

- **Frequently Asked Questions on the Application Process.**
- **Procurement Guidance.** This guidance outlines the requirements that applicants must follow if their application is funded.
- **Guidance for Recreational Projects.** This April 2003 guidance provides background on how Montana's natural resource damage lawsuit addressed lost recreational uses and the eligibility of recreational projects for UCFRB restoration funds.
- **Guidelines for Project Applications Involving Aquatic and Terrestrial Resources and Public Recreation.** These guidelines contain helpful hints to be used in preparing applications for proposed UCFRB projects that seek to improve aquatic and terrestrial resources and associated recreational services. Such projects could include restoration, replacement, or rehabilitation of upland habitat, riparian habitat, wildlife or fisheries populations, wetlands, streams, or ecological systems, or recreational services such as hunting and fishing. Applicants contemplating any watershed-scale restoration projects are particularly encouraged to use this guidance.
- **Issue Paper on Conservation Easements.** In March 2001, the NRDP and Advisory Council hosted a panel discussion on the pros and cons of conservation easements and their role in the UCFRB activities. This issue paper provides a summary of the panel discussion as well as the detailed presentations. A video of the panel is available upon request to the NRDP.

CHANCE FOR PUBLIC COMMENT

If you would like to comment on the State's *2003 Draft Upper Clark Fork River Basin Restoration Work Plan*, you can send comments postmarked by **October 14, 2003** to:

Natural Resource Damage Program
PO Box 201425
Helena, MT 59620-1425
Or Fax to 444-0236
Or email nrdp@state.mt.us

Copies of the document can be found on the NRDP website at www.doj.state.mt.us under "Montana Lands".

In addition, a public hearing will be held on **Tuesday, September 23, 2003 at 7:00 p.m. at the Ramada Copper King Inn located at 4655 Harrison Avenue in Butte.** The projects will be summarized at this meeting and there will be an opportunity to submit either written or oral comments.

Watershed Land Acquisition Completed

By: Carol Fox, NRDP

"My oh My What a Wonderful Day!" This declaration of Al Chistophersen, the Volunteer State Chair for the Rocky Mountain Elk Foundation (RMEF), reflected the sentiments of many who attended an August 9th dedication ceremony for the Watershed Land Acquisition. RMEF recently completed a four-year effort to obtain about 32,300 acres of wildlands between Anaconda and Georgetown Lake for pubic ownership (see map). The property, referred to as the "Watershed Land Acquisition," includes habitats for native trout, critical big game winter range, alpine lakes, and wetlands (see inset).

RMEF's effort began in 1999 when the Foundation negotiated a purchase option to acquire this property from Y.T. Timber via a phased acquisition over 4 years. The option agreement allowed Y.T. Timber to conduct timber harvest activities of up to 30 million board feet on the Acquisition lands over 7 years subject to the terms of a timber management policy.

RMEF next successfully pursued natural resource damage grant funds for the state portion of the acquisition. In December 2000, Governor Racicot approved $3,764,231 in grant funds for the Phase 1 acquisition of 5,790 acres, or approximately 65% of the lands slated for state ownership. In December 2001, Governor Martz approved the $2,067,673 in grant funds to acquire the remaining 3,181 acres, referred to as the "Phase 2" acquisition.

Combined, the State purchased a total 8,971 acres of the Watershed Land Acquisition for $5,831,904 using UCFRB Restoration funds. Phase 1 and 2 acquisition lands consist of two parcels that provide prime wildlife habitat and numerous recreational opportunities – the Garrity Mountain parcel (6,706 acres) and the Clear Creek parcel (2,265 acres). The Montana Fish Wildlife and Parks now manages the state property as the Garrity Mountain Wildlife Management Area.

RMEF also successfully pursued award of federal Land and Water Conservation funds for the federal portion of the acquisition over a three-year period. The Forest Service obtained a total of 23,300 acres for federal ownership for $17.3 million.

As of June 2003, Y.T. Timber has harvested 23.5 million board feet of timber from the Acquisition lands. The Company has until 2006 to complete its logging of an additional 6.5 million board feet.

At the dedication ceremony in August 2003, Attorney General McGrath applauded the remarkable accomplishments of a small group of dedicated individuals to return this magnificent piece of Montana back to public ownership. "This historic land acquisition didn't happen overnight—it took years of hard work, a lot of money, and a number of farsighted individuals to make it happen." He also noted that it was 20 years ago that the State filed natural resource damage lawsuit, which has provided the settlement monies used for the State's acquisition.

(Continued on Page 4)

Watershed Dedication August 9, 2003

(Continued from Page 3)

In her congratulatory letter to RMEF, Governor Martz noted the acquisition as a model partnership effort and an excellent use of the Upper Clark Fork Restoration Funds. She wrote of the benefits to keeping this area wild and available for all of us to enjoy: "The quality of life in Montana is intrinsically tied to the outdoors and the special places where we listen to the camping and hunting stories of our friends and family. In such places we soon come to understand that conservation is part of our heritage. The Watershed Project provides mountains, secret, quiet lakes and meadows where generations of memories will continue to be made in solitude and with family and friends."As a fitting end to the ceremony, youngsters Christine and Shane Talley, who hunt, fish and enjoy the open spaces of the Watershed Land Acquisition lands with their family, spoke eloquently of their appreciation for the protection of these lands for the benefit of future generations. Christina discussed how passing the land on to future generations would make a difference for animals, people, the industry it supports and the environment it sustains.

In his concluding remarks, Al Christophersen noted that Anaconda resident Don Gates sums it up well for all of us, "I have hunted, hiked and rode horseback on this property for 45 years, raised 5 kids (3 sons, 2 daughters) and eight grand kids and all of them have traveled this property with me. This property going into public ownership means a lot to me and to my kids, to be able to continue freely traveling the land that I grew up in."

In 1983, the State of Montana sued ARCO for the loss of fish and wildlife habitat and associated public recreational and drinking water uses in the Basin. Now, 20 years later, as a result of this lawsuit, the public fish and wildlife habitat and public recreational opportunities have increased from this acquisition and other grants project.

INSET: The following is a description of the Watershed Property provided at the dedication ceremony.

Contiguous with National Forest system lands, the Watershed property lies just west of Anaconda, Montana. The property takes its name from the fact that it serves as the primary watershed for Warm Springs Creek. Ranging in elevation from 5,500 to 9,000 feet, the area encompasses forested foothills and rocky alpine lake basins. Less than two miles from the Mount Haggin state-managed winter range, the property serves as habitat for various game and non-game species. It's notable for several creeks than contain bull trout and for documented use by lynx, martin and wolverine. Several alpine lakes and Cable Creek support significant fisheries and wetlands that provide habitat for waterfowl.

Profile of Advisory Council Member John Hollenback

My name is John Hollenback. I live in Gold Creek, Montana. I own and operate the ranch that has been in the family since about 1900. I raise Angus cattle, a cow-calf operation. I'm married and my wife, Carole, and I have two children. My son, Keith, his wife, Amy, and our grandson, Noah and a daughter, Jennifer.

My dad passed away in 1951 when I was 12 years old and when I graduated from high school in 1957, I started operating the ranch. I wanted to make some improvements, so I contacted the Soil Conservation Service and put in one of the first sprinkler systems in the County. I have served on the Deer Lodge Valley Conservation Committee for about 35 years.

I have been very interested in Range Management Practices and over the years have served on various boards. I was appointed on the State Rangeland Executive Committee by the Governor in 1972 and am still serving on that Committee. I am also presently serving on the Grazing Land Conservation Initiative Committee. I was chairman of the Powell County Planning Committee when it was started in 1972 and am still serving on that Board. I also serve on the county FSA (Farm Service Agency) Committee.

I helped to form a committee called the WRC (Water Shed Restoration) for the Upper Clark Fork. The work on that committee has led to my appointment on the NRD Committee. I have been very interested in what will happen on the Clark Fork so serving on the committee gives me an opportunity to be involved.

In my free time, I like going to sporting events, play a little golf, travel and spend time with my family at Flathead Lake.

Restoration of Milltown Planned

By: Doug Martin

In May 2003, the State of Montana, in cooperation with the U.S. Fish and Wildlife Service and Confederated Salish and Kootenai Tribes developed a *Draft Conceptual Restoration Plan for the Clark Fork River and Blackfoot River Near Milltown Dam (DCRP)*. This plan provides a vision of how these two rivers might be restored if Milltown Dam and a large portion of the contaminated sediments behind were removed. The Environmental Protection Agency (EPA) and the Montana Department of Environmental Quality (DEQ) have proposed this removal as the preferred alternative in their April 2003 proposed remediation or "clean-up" plan for the Milltown Reservoir. The *DCRP* builds on the EPA/DEQ remediation plan and was developed based on the following objectives:

- Restore the confluence area of the Blackfoot and Clark Fork Rivers to be naturally functioning and self-maintaining;
- Use natural, native materials, to the extent practicable, for stabilizing channels, banks and floodplain;
- Improve water quality by reducing the rate of release of contaminated sediments through bank erosion outside the area covered by the remediation plan;
- Provide high quality habitat for fish and wildlife;
- Improve aesthetic values in the area by creating a diverse, natural setting; and
- Provide recreational opportunities such as river boating, fishing, and trail access for hiking and bicycling.

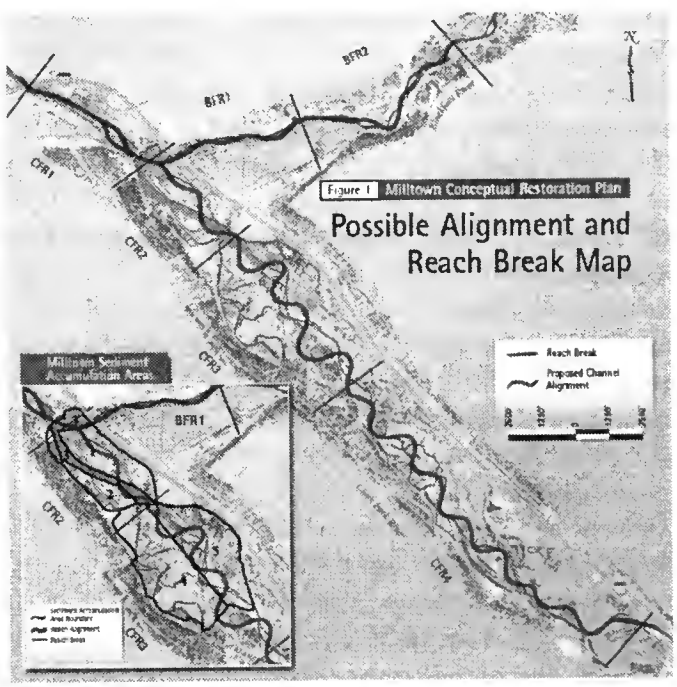
The State proposes restoring the Blackfoot and Clark Fork Rivers in the area of Milltown Dam using natural channel design. Natural channel designs restore damaged rivers by emulating the pattern and shape of healthy channels and floodplains in similar land types. Native materials such as vegetation, logs, and rock are used to build channels and floodplains that look and function naturally. The natural channel design contemplated by the *DCRP* relies on existing vegetation and aggressive revegetation to: provide bank stability; reduce energy of water flowing on the floodplain; provide fish and wildlife habitat; establish native plant communities, including woody species; inhibit noxious weeds and provide desired aesthetics.

The EPA/DEQ remediation plan proposes a new Clark Fork River channel in the area; however, the EPA/DEQ proposed plan is based on superfund objectives of protecting human health and the environment, where the *DCRP* objectives are based on returning the site to a pre-dam condition. Many of the remediation plan elements, such as sediment removal, would not be altered under restoration, other remediation and restoration activities can be combined, and some restoration activities will replace remediation elements.

The *DCRP* enhances many recreational activities for the public. River boating, fishing, viewing wildlife, and trail access are among the activities that would be improved. A diverse landscape with native plants would also improve the general aesthetics and enhance the recreational activities people take part in. Rock structures would enhance whitewater boating by producing drops and repeated step-pools as well as create excellent trout habitat and fishing opportunity by scouring pools. Diverse terrestrial and wetland habitats comprised of native plants would enhance wildlife use and viewing.

The State is seeking public input on the *DCRP* until October 15, 2003 before proceeding to the detailed design phase. Written comments may be sent to Doug Martin, Natural Resource Damage Program, P.O. Box 201425, Helena, MT 59620-1425, faxed to 444-0236 or emailed to nrdp@state.mt.us.

Copies of the *DCRP* are available for viewing at the public libraries in Missoula, Anaconda, Butte, and Deer Lodge, the Bonner School Library, the Missoula City County Health Department, and the Montana FWP Missoula office. Copies can also be downloaded from the NRDP website at www.doj.state.mt.us under "Montana Lands" or from the FWP website at www.fwp.state.mt.us under "Public Notices."



Conceptual Map of the Clark Fork River near Milltown Dam.

(Continued from Page 1)

After public comment, both the Advisory Council and the Trustee Restoration Council will be able to consider public comment and vote again. The Trustee Restoration Council will then make final funding recommendations to the Governor, who is the final decision maker. The Governor is expected to make this decision in December.

A description of all six projects, who the applicant is and recommendations of the various entities are provided below.

For information on how you can comment on these recommendations see the article entitled "Chance for Public Comment" on page 2.

(1) Basin Creek Dams Rehabilitation ("Basin Dams") – Butte-Silver Bow City County Government

Butte-Silver Bow City County proposes to upgrade the two Basin Creek Dams for a cost of $806,012 with $503,006 requested in Restoration funds. The Basin Creek Reservoir system comprises about 35% of Butte's annual water supply. No water treatment is presently required because of high water quality from the reservoirs. The focus of this grant is to make the improvements needed to maintain the filtration waiver and to supply the citizens of Butte with an economic, reliable, and safe drinking water supply.

The dams are located six and seven miles south of Butte. The initial construction of the dams was completed in 1895. The upper dam (#2) and reservoir serve primarily to remove sediment. The lower reservoir (#1) serves as the primary storage reservoir with a capacity of 363 million gallons (1,115 acre-feet). Dam #1 consists of mortared granite blocks and is 77 feet high and 247 feet long.

A large portion of Butte's bedrock aquifer is so severely injured that natural recovery will not occur for thousands of years, as concluded by State's 1995 Restoration Determination Plan and by EPA's 1994 Record of Decision. Restoration of the bedrock aquifer is infeasible, thus the aquifer's drinking water storage capacity and transport services have been lost for thousands of years. This proposal enhances an uncontaminated drinking water supply for Butte water users. Thus, it constitutes replacement of lost services to some of the thousands of property owners and to other members of the public in Butte that could use the aquifer if it was not injured.

Recommendations:

NRDP Staff – Recommended for full funding.
Advisory Council – Recommended for full funding.
Trustee Restoration Council – Recommended for full funding.

(2) Drinking Water Infrastructure Replacement Year 3 ("Butte Waterline") – Butte-Silver Bow City County Government

Butte-Silver Bow City County proposes to replace approximately 17,000 feet of inadequate water distribution lines in the City of Butte for a total cost of $1,742,401, including $1,188,905 requested in Restoration funds. This is the third year in which Butte-Silver Bow has requested funding for water line replacement. The amount requested is $20,063 more than last year's approved funding request.

Butte's bedrock aquifer is contaminated throughout a seven square mile area of the City and these distribution lines overlay that aquifer. This aquifer is so severely injured that natural recovery will not occur for thousands of years as concluded by the State's 1995 Restoration Determination Plan and by the U.S. Environmental Protection Agency 1994 Record of Decision. Restoration of the bedrock aquifer is infeasible, thus the aquifer's drinking water and its storage capacity and transport services have been lost for thousands of years. By fixing leaking and corroded water lines, this project will enhance the water supply from an uncontaminated source. Thus, it constitutes replacement of

lost services to thousands of property owners and other members of the public in Butte that could utilize the aquifer if it was not injured.

NRDP Staff – Recommended for full funding.
Advisory Council – Recommended for full funding.
Trustee Restoration Council – Recommended for full funding.

(3) East Fourth Street Water Main Improvements ("Anaconda Waterline") – Anaconda-Deer Lodge City County Government

Anaconda-Deer Lodge County is replacing a leaking, 104-year-old, 14-inch waterline along Fourth Street. The water distribution system within the City of Anaconda loses approximately 1.75 million gallons of water per day through leaks. Repairing these leaks is an alternative that will provide the City of Anaconda with additional water resources instead of developing a new source of water. The total project costs are $1,282,318, with $287,318 in matching funds.

The City of Anaconda is located adjacent or partially within the 40 square miles of groundwater contamination associated with the Anaconda Regional Water, Waste, and Soils Operable Unit. Groundwater resources are somewhat limited because the upper portion of the alluvial groundwater aquifer east of Anaconda is contaminated with metals associated with past mining activities at levels above water quality standards. The 1995 State of Montana Anaconda Groundwater Injury Assessment Report supports this claim of groundwater contamination east of Anaconda. Also, the 1998 Anaconda Regional Water, Waste, and Soils Operable Unit Record of Decision show some 30 square miles of contaminated bedrock groundwater to the north and south of the City.

NRDP Staff – Recommended for full funding.
Advisory Council – Recommended for full funding.
Trustee Restoration Council – Recommended for full funding.

(4) East Valley Watershed ("East Valley") – Watershed Coalition of the Upper Clark Fork and the Deer Lodge Valley Conservation District

This replacement project seeks to improve water quality, riparian and upland wildlife habitat, aquatic habitat and fisheries and enhance existing recreational opportunities primarily by applying off-stream water, prescribed grazing, and selected road improvements. The project area encompasses seven Clark Fork River tributary drainages located between Warm Springs Ponds and Deer Lodge. Off-stream water projects involve implementation of prescribed grazing plans and installation of stock tanks, pipelines, spring developments and cross fencing. Other proposed project activities include project coordination, integrated weed management, monitoring, education, and assessment activities in a few targeted areas.

The seven tributary streams (Caribou Creek, Orofino Creek, Sand Hollow, Dry Cottonwood Creek, Sand Creek, Perkins Gulch, and Girard Gulch) are relatively small and none connect with the Clark Fork River except during extreme storm events. Three of the seven streams (Perkins Gulch, Dry Cottonwood Creek, and Orofino Creek) support small, resident trout fisheries; two of these three support genetically pure populations of westslope cutthroat trout (Perkins Gulch and Orofino Creek). A 2002 watershed assessment identified impaired aquatic and riparian habitat conditions on the lower reaches of the seven streams. Excessive grazing pressure and, to a lesser degree, road conditions near streams, were indicated as the major causes of these impaired conditions.

The total project area encompasses about 55,000 acres, with about 35,000 acres of private lands (64%), 16,500 acres of National Forest System Lands (30%), and 3200 acres of state lands (6%). The eight participating private landowners own about 30,000 of the 35,000 acres of private lands. Combined, the proposed projects on state, federal, and private lands cover 92% of the 55,000- acre project area.

Total project costs are $840,373, with $539,458 requested in Restoration funds and $300,915 proposed as future matching funds. An additional $311,500 has already been invested by project partners in the past 2-3 years on assessment, education, planning and coordination activities in the project area. Project expenses would occur over a 5-year period, with the majority of the Restoration funds to be spent in 2004 and 2005.

NRDP Staff – Recommended for partial funding of $408,810.
Advisory Council – Recommended for partial funding of $408,810.
Trustee Restoration Council – Recommended for partial funding of $408,810.

(5) Thompson Park and Blacktail Creek Rehabilitation and Restoration Project ("Thompson Park") – Butte-Silver Bow City and County Government

Butte-Silver Bow City County, in cooperation with the U.S. Forest Service, requests $1,282,529 in Restoration funds for a project that is designed to improve natural resources and recreational opportunities in Blacktail Creek Watershed, a tributary watershed to Silver Bow Creek. The total project costs are estimated at $1,861,616. The entire Blacktail Creek Watershed is 24,618 acres. The proposal has project components throughout the watershed. However, the majority of projects are located in Thompson Park, a 3,454-acre municipal park in the watershed, located about 10 miles south of Butte in the Beaverhead and Deerlodge National Forest. Butte-Silver Bow and the U.S. Forest Service jointly manage the park. In the 1930's, the Works Progress Administration built the majority of the park roads and recreation sites. The park historically was a popular recreational area for the community of Butte and area visitors. However, over time the park's infrastructure has greatly deteriorated and the poor condition of the Park's roads, trails, and bridges causes sedimentation to Blacktail Creek.

The major components of the Restoration Fund request involve improving 10 dilapidated recreation sites, such as adding toilets and picnic tables (16% of costs); improving 33 miles of hiking trails (29% of costs); replacing three road access bridges and other access components (24% of costs); improving aquatic, riparian, and upland habitat in the Blacktail Creek Watershed (18% of costs); and conducting initial environmental analysis of project (11% of costs). The applicant proposes to contribute an additional $579,088 to the project for management plans, oversight and design, railroad trestle and tunnel repair, and a pavilion. At this time the applicant has secured $220,000 of in-kind funding for these components. Approximately 75% of the proposed components costs are for projects located in Thompson Park itself. The remaining 25% of projects costs are for project components that are located on U.S. Forest Service lands outside of the Park. The U.S. Forest Service plans on completing an environmental analysis for some of the project components by late 2004. Most of the construction efforts are scheduled to occur in 2005.

NRDP Staff – Recommended for partial funding of $525,000.
Advisory Council – Not Recommended for funding.
Trustee Restoration Council – Not Recommended for funding.

(6) Upper Willow Creek Restoration Project Implementation ("Upper Willow Creek") – Montana Fish, Wildlife and Parks

Montana Fish, Wildlife and Parks requests $307,758 to restore about three miles of Upper Willow Creek, a tributary of Rock Creek. The project area starts about 4 miles upstream of the confluence of Upper Willow Creek and Rock Creek, which is about 15 miles west of Philipsburg. The total project cost is estimated at $916,983 with the desired funding sources from seven other entities in addition to NRDP. The project mainly involves construction of a new stream channel and banks along a 13,700-foot reach of Upper Willow Creek, revegetation, and grazing management. The present condition of this reach of Upper Willow Creek has degraded riparian habitat and contributes sediment to downstream reaches of Upper Willow Creek and to Rock Creek, degrading its water quality. Montana Fish, Wildlife and Parks also requests $50,000 to develop conceptual design plans for two other degraded sections of Upper Willow Creek.

The project would create and enhance fish, wildlife and water quality resources in Upper Willow Creek, including native bull trout and westslope cutthroat trout populations. The project would increase trout recruitment to Rock Creek, as Upper Willow Creek is an important spawning tributary for Rock Creek. Increased trout populations would enhance recreational fishing opportunities on both Upper Willow Creek and Rock Creek, assuming existing public access is maintained. Thus, the project constitutes replacement of injured natural resources and lost public use of natural resources.
NRDP Staff – Recommended for partial funding of $282,758.
Advisory Council – Recommended for partial funding of $282,758.
Trustee Restoration Council – Recommended for partial funding of $282,758.

Public Hearing Notice

The Department of Justice/ Natural Resource Damage Program will hold a Public Hearings to discuss its *Draft 2003 Upper Clark Fork River Basin Restoration Work Plan.* This document outlines the State's recommended projects for 2003 restoration grant funds obtained from the partial settlement of Montana v. ARCO. This meetings will provide an overview of the projects and the project evaluation process. There will also be an opportunity for individuals to provide formal comments to the State. The meeting will be held at:

- **Tuesday, September 23, 2003 at 7:00 p.m.Butte Ramada Copper King Inn**
  4655 Harrison Avenue

For additional information, please contact Kathy Coleman at 444-0229.

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NRDP's Litigation Efforts Receive National Recognition

By Carol Fox, NRDP

The National Wildlife Federation (NWF) recognized the achievements of the Natural Resource Damage Program's (NRDP) litigation efforts in selecting the Program as one of 16 winners of the prestigious 2002 National Conservation Achievement Award. The NRDP was selected for the Legislative/Legal category.

This national awards program was established to honor individuals and organizations whose achievements in natural resource conservation deserve national recognition. Recipients are nominated by individuals and groups across the country and are selected by the Awards Committee of the NWF Board of Directors. The following, with some edits, is the NWF's summary of the NRDP's accomplishments produced for this award.

In Montana, mining and mineral processing operations around the cities of Butte and Anaconda released immense quantities of hazardous mining substances into the Upper Clark Fork River Basin for decades between Butte and Missoula. These hazardous substances extensively injured the first 120 miles of the Clark Fork River, all of Silver Bow Creek and denuded and destroyed thousands of acres of upland habitats.

On behalf of the people of Montana, the State filed a natural resource damage lawsuit against the Atlantic Richfield Company (ARCO) and in 1990 the Natural Resource Damage Program (NRDP) was created in the Montana Department of Justice to pursue Montana's lawsuit. After a six-month court trial, in 1998 the NRDP negotiated a partial settlement for the natural resource damages and received approximately $130 million from ARCO to restore the Upper Clark Fork River Basin's public natural resources, particularly its fish, wildlife, vegetation, groundwater, rivers and streams.

The NRDP has gone above and beyond what Is expected by its pursuit of effective remediation and restoration in the Basin. The NRDP has stayed independent from political forces that have hampered other entities seeking environmentally protective solutions to historical contamination problems.

For example, after obtaining the $130 million for restoration, the NRDP developed a grant process whereby various groups, organizations and public agencies could apply for funding for natural resource restoration purposes. The first two years of the grant process has resulted in substantial funding for valuable stream restoration, wildlife habitat acquisition and conservation easement projects for the benefit of wildlife, wild places and a healthy environment.

The 1998 partial settlement represented the largest natural resource damage recovery award under Superfund law by a state. The NRDP is continuing to pursue other litigation for further claims of injuries to natural resources in the Basin that have not yet been settled. The Montana Department of Justice, Natural Resource Damage Program is a great example of what can be accomplished. Their work is serving to invigorate other states to continue with their lengthy and exhausting natural resource damage programs.

(Continued from previous page)

Rob Collins, supervising attorney and Greg Mullen, staff scientist, accepted the award on behalf of the NRDP at the NWF's annual meeting held in Washington D.C. in March 2003. The other members of the NRDP litigation team in 1998 were attorneys Candy West, Bob Gentry, and Chuck McGraw, staff scientist Mark Kerr and staff paralegal, Kathy Coleman. The NRDP appreciates this national recognition and the efforts of Kathy Hadley, a past Advisory Council member, in support the program's nomination for this prestigious award.

FISCAL REPORT

Each quarter the NRDP reports Restoration Fund expenses and revenues. From January 1998 through June 2003, Restoration Fund expenses have totaled **$12,781,388**. This includes $10,863,129 on grant projects since 2000. Expenses also include $1,218,543 in program costs, $90,127 for the Advisory Council, and $363,338 for Fish, Wildlife and Parks, who have been allocated $3.2 million from the settlement for wetland/riparian enhancements. Another expense incurred is $148,930 for the Silver Bow Creek Planning effort. A breakdown of expenses is outlined in the table below.

Between January 1998 and July 2003, interest revenues to the Restoration Fund have totaled **$36,434,655**. The fiscal year end 2003 fund balance was $142,819,611.

TOTAL UCFRB RESTORATION FUND EXPENSE

Entity	1/1/98 TO 7/1/00	FY01	FY02	FY03	TOTAL
MFWP Admin		$40,000.00	$80,000.00	$120,000.00	$240,000.00
MFWP Wetland/Riparian	$49,653.00	$1,000.00	$1,800.00	$21,892.50	$74,345.50
MFWP Bull Trout	$0.00		$0.00	$48,993.44	$48,993.44
Advisory Council	$38,349.14	$25,246.07	$9,903.78	$16,628.57	$90,127.56
NRDP Restoration	$315,4559.27	$306,368.63	$291,415.71	$305,299.71	$1,218,543.32
Silver Bow Creek Land Transfer	$0.00	$249.50	$2,414.50	$980.41	$3,644.41
Silver Bow Creek Planning			$27,096.77	$121,832.67	$148,929.44
Milltown			$8,805.89	$84,869.77	$93,675.66
Subtotal	$403,461.41	$372,864.20	$421,436.65	$720,497.07	$1,918,259.33
NRD Grants		$4,510,783.43	$2,222,402.04	$4,129,943.45	$10,863,128.92
Total	**$403,461.41**	**$4,883,647.63**	**$2,643,838.69**	**$4,850,440.52**	**$12,781,388.25**

MFWP has received transfers in the amount of $240,000 (other than the amount spent on riparian/wetland) but has expended $229,347.55 as of 6/30/03.

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